SONY

CAMERA IMAGE ENHANCER

HDIE-100

HDVS

OPERATION AND MAINTENANCE MANUAL
1st Edition (Revised 1)
Serial No. 10101 and Higher

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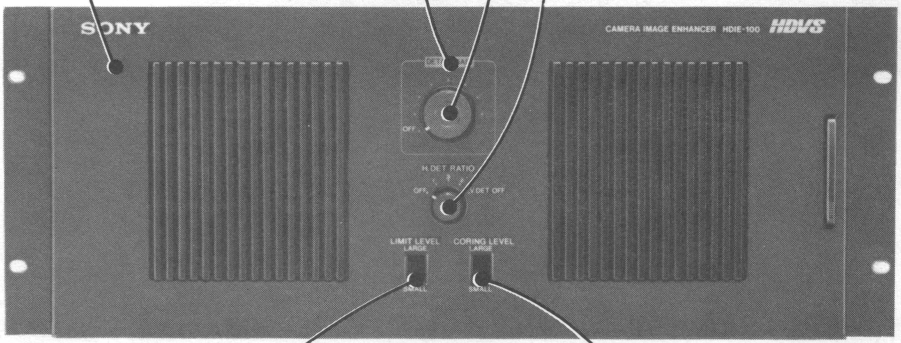
第1章
取り扱い操作

HDカメライメージエンハンサーHDIE-100は，高解像度ビデオシステム（High Definition Video System, 略してHDVS）のR,G,B 3チャンネル信号をデジタル化し，垂直，水平，両方向の輪郭成分を効果的に補正するためのエンハンサーです。特に，HDVS用カメラと接続し，信号の品質を大幅に向上させることができます。また，カメラだけでなく，HDVSシステムの各種伝送系やVTRの信号補正などに使うことができます。

1-1. 各部の名称と働き

1-1-1. 操作パネル



❶電源ランプ
本機に接続されているイメージエンハンサーパワーユニットHDIP-100から電源が供給されると、点灯します。

❷DETAIL GAIN（輪郭補正量）インジケーター
このインジケーターが点灯している間，輪郭補正量は，本機のDETAIL GAIN調整つまみ❸で行うことができます。輪郭補正量の調整は，本機または，HDカメラオペレーショナルコントロールユニット HDCO-100 で行うことができ，どちら側で調整するかはHDCO-100の前面のDIE GAINスイッチで切り換えます。このスイッチがDIEのときは，本機での調整が有効になり，DETAIL GAINインジケーターが点灯します。CCUのときは，HDCO-100側での調整が有効になり，本機のDETAIL GAINインジケーターは消灯します。

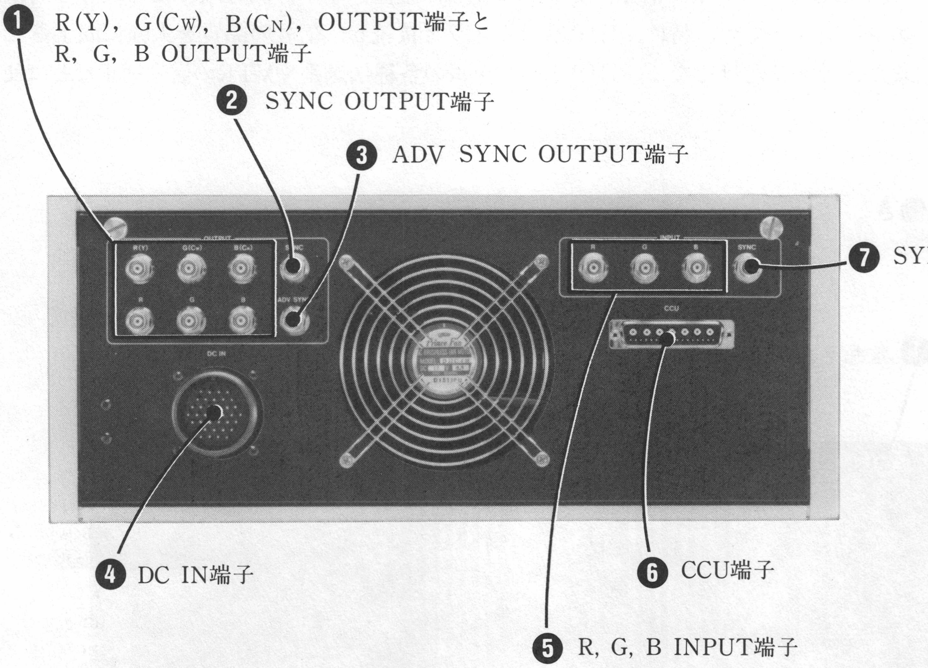
❸DETAIL GAIN（輪郭補正量）調整つまみ
輪郭補正量を8段階に切り替えます。OFFの位置では，輪郭補正は行われません。数字が大きくなるに従って，補正量も大きくなります。

❹H. DET RATIO（水平輪郭補正率）調整つまみ
垂直対水平方向の補正量の割合を切り換えます。
OFF：垂直方向のみの補正が行われます。
1，2，3：数字が大きくなるに従って，垂直方向に対する水平方向の補正率が大きくなります。
V. DET OFF：水平方向のみの補正が行われます。

❺LIMIT LEVEL（輪郭振幅制限）切り換えスイッチ
垂直と水平の輪郭補正信号のうち、大振幅の変化分は強調せず，小振幅部分のみを強調したいとき，LARGEの位置にします。

❻CORING LEVEL（コアリングレベル）切り換えスイッチ
輪郭補正信号には，小振幅部分にノイズが多く含まれる場合があります。このノイズを除去するために，ノイズの振幅の大きさに応じて，LARGE（大）かSMALL（小）に切り換えてください。

1-1-2. 接続パネル



❶R, G, B OUTPUT(出力)端子とR(Y), G(Cw), B(Cn) OUTPUT端子 (BNC型)

本機で輪郭補正処理を行ったビデオ信号が出力されます。R(Y), G(Cw), B(Cn) OUTPUT端子からも, R, G, B OUTPUT端子同様に, R, G, B信号がそれぞれ出力されます。

出力信号は、本機内部の信号処理のため, 入力ビデオ信号にくらべて1H (29.6μsec) ＋約1.0μsec遅れています。

出力信号は, 内部のSG基板上のSYNC1とSYNC2スイッチにより, 同期信号 (SYNC) とバースト (BURST) 付きのコンポジット信号にすることも, これらの信号の付かない, ノンコンポジット信号にすることもできます。

❷SYNC OUTPUT (同期出力) 端子 (BNC型)

同期信号の出力端子。

❸ADV SYNC OUTPUT (アドバンスシンク出力) 端子 (BNC型)

アドバンスシンク信号の出力端子。

❹DC IN (DC電源入力) 端子 (37ピン)

イメージエンハンサーパワーユニットHDIP-100のDC OUT端子と, DCケーブル (HDIP-100に付属) を使って接続します。

❺R, G, B INPUT (入力) 端子 (BNC型)

R, G, B信号(ノン・コンポジット)の入力端子。

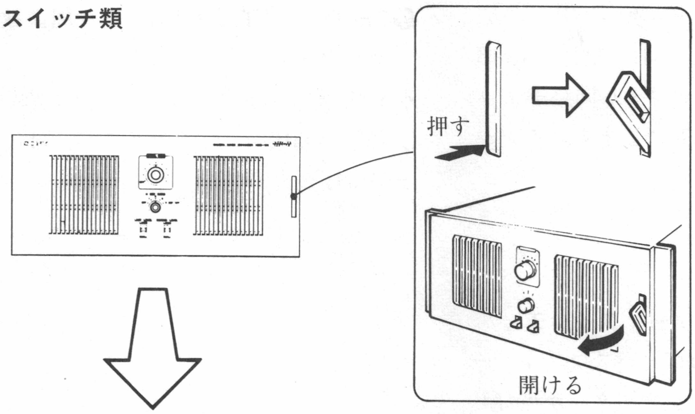
❻CCU (カメラコントロールユニット) 端子

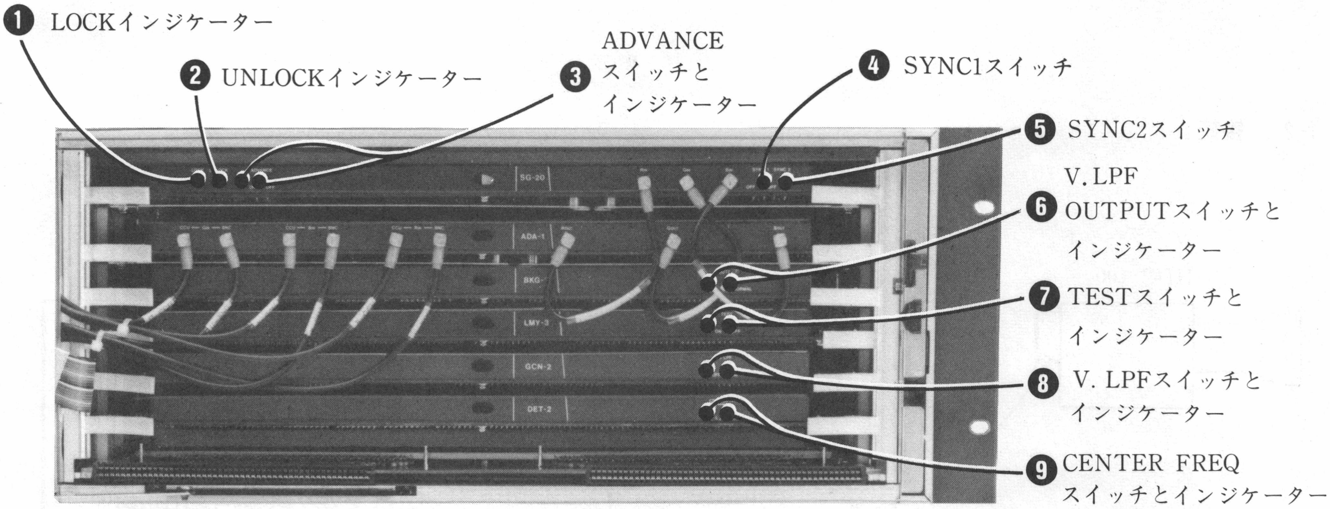
ソニーHDカメラシグナルプロセッサー HDCS-100 の EN-HANCER端子と,付属のHDVTC-1ケーブルで接続します。カメラからの入力信号と, HDIE-100からの出力信号の受け渡しが, ケーブル1本で可能です。

❼SYNC INPUT (同期入力) 端子 (BNC型)

同期信号の入力端子。

1-1-3. 内部基板のスイッチ類





❶LOCK（同期）インジケーター
本機が，外部同期信号に同期しているとき点灯します。

❷UNLOCK（非同期）インジケーター
外部同期信号が入力されていないとき，あるいは，入力されていても，本機が，その信号と同期がとれないときに点灯します。

❸ADVANCE（アボバンス）スイッチとインジケーター
ON：本機が信号処理に要する時間をΔtとすると，SYNC INPUT端子に入力された同期信号に比べ，本機の動作がΔt進みます。(SYNC INPUT端子へ入力された同期信号の位相に比べ，ADV SYNC OUTPUT端子からの信号の位相はΔt進み，SYNC OUTPUT端子からの信号の位相は同じになります。)
この位置のとき，インジケーターが点灯します。
OFF：本機の動作は，SYNC INPUT端子に入力された同期信号に同期します。(SYNC INPUT端子へ入力された同期信号の位相とADV SYNC OUTPUT端子からの信号の位相が同じになります。) 通常は，この位置にします。

❹SYNC 1（同期1）スイッチ
ON：本機の接続パネル上のR(Y)，G(C_W)，B(C_N) OUTPUT端子から出力されるビデオ信号に，同期とバースト信号を付けるとき。
OFF：同期とバースト信号を付けないとき。

❺SYNC 2（同期2）スイッチ
ON：本機の接続パネル上のR, G, B OUTPUT端子から出力されるビデオ信号に，同期とバースト信号を付けるとき。
OFF：同期とバースト信号を付けないとき。

❻OUTPUT（出力）スイッチとインジケーター
DTL：本機のR(Y)，G(C_W)，B(C_N) およびR, G, B OUTPUT端子とCCU端子から，輪郭補正成分のみを出力するとき，この位置にします。インジケーターが点灯します。
NORMAL：通常のビデオ信号を出力するとき，この位置にします。

❼TEST（テスト）スイッチとインジケーター

ON：本機のR(Y)，G(Cw)，B(CN)，およびR，G，B OUTPUT端子とCCU端子から，デジタル回路チェック用信号を出力するとき，この位置にします。インジケーターが点灯します。

OFF：通常のビデオ信号を出力するとき，この位置にします。

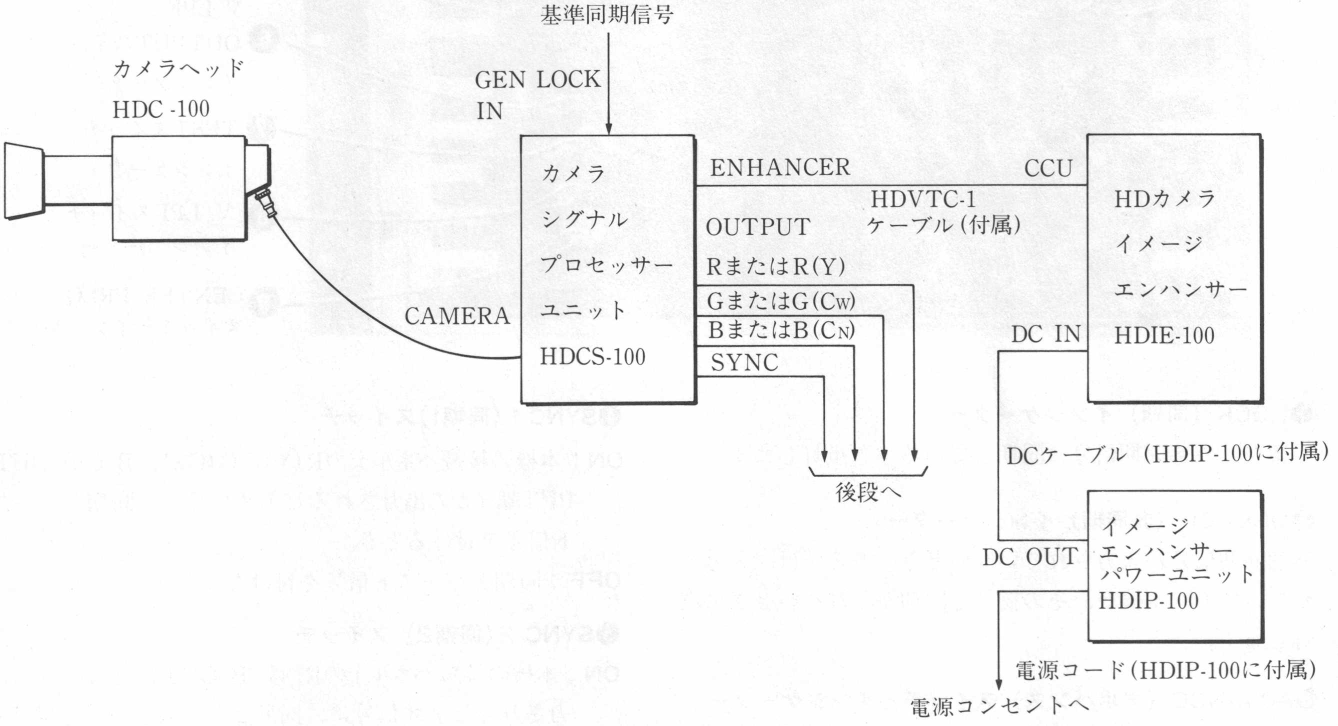
❽V. LPF（垂直成分ローパスフィルター）スイッチ

垂直方向輪郭補正信号に，水平方向のローパスフィルターをかけたいとき，ONにします。インジケーターが点灯します。

❾CENTER FREQ（センター周波数）スイッチとインジケーター

水平方向輪郭補正信号のセンター周波数をH（高），M（中），L（低）の3段階に切り換えます。Mのとき，インジケーターが点灯します。

1-2. 接続



1-3. 操作

1-3-1. 準備

通常は，内部の基板のスイッチ類を，次の位置に設定しておいてください。

基板名	スイッチ	位置
SG-20	ADVANCE	OFF
	SYNC 1	ON
	SYNC 2	ON
BKG-2	OUTPUT	NORMAL
LMY-3	TEST	OFF
GCN-2	V. LPF	ON
DET-2	CENTER FREQ	M

1-3-2. 操作

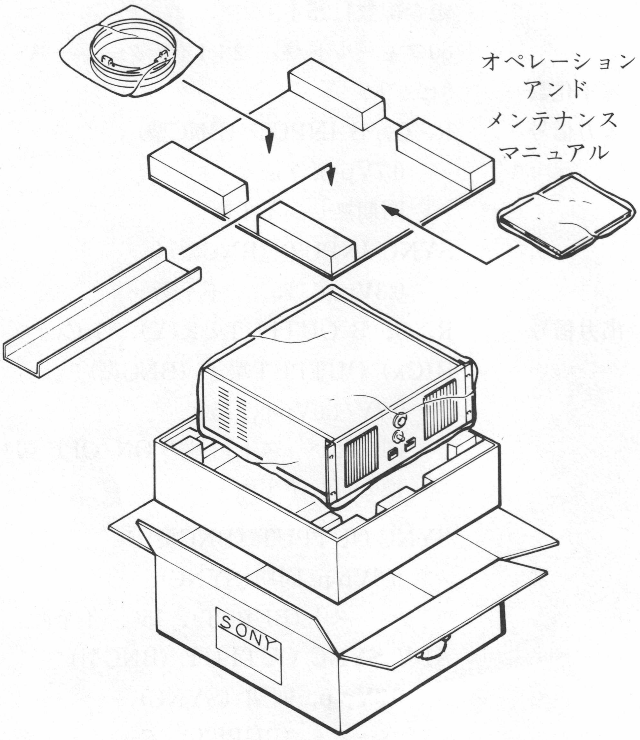
1. HDIP-100のPOWERスイッチをONにします。
   HDIE-100に電源が供給されて，HDIE-100の電源ランプが点灯します。
2. H. DET RATIO 調整つまみで，垂直対水平方向の輪郭補正率を設定し，次に，DETAIL GAIN調整つまみで補正量を設定します。
3. 絵柄，画面の状態に応じて，LIMIT LEVEL切り換えスイッチと，CORING LEVEL切り換えスイッチを調整します。
4. DETAIL GAIN調整つまみを再度調整して，輪郭が強調された良好な画面になるように調整します。

1-4. 主な仕様

信号処理	RGB 3チャンネルコンポーネント 走査線数1125本， 60フィールド/秒，2：1インターレース
量子化数	8ビット
入力信号	R，G，B INPUT（BNC型）： 0.7Vp-p，75Ω， 同期無し，不平衡 SYNC INPUT（BNC型）： 0.3Vp-p，75Ω，不平衡
出力信号	R，G，B OUTPUTとR(Y)，G(Cw) B(CN) OUTPUT端子（BNC型）： 0.7V/1.0Vp-p，75Ω， 同期とバースト信号の ON/OFF 切り換え可，不平衡 SYNC OUTPUT（BNC型）： 0.3Vp-p，同期(SYNC)， バースト(BURST)，75Ω，不平衡 ADV SYNC OUTPUT（BNC型）： 0.3Vp-p，同期（SYNC）， バースト（BURST），75Ω，不平衡
周波数特性	R，G，B共通 60Hz～20MHz±0.5dB
調整項目	LIMIT LEVEL：SMALL/LARGE CORING LEVEL：SMALL/LARGE H.DET RATIO：OFF/1/2/3/ V. DET OFF DETAIL GAIN：OFF/1/2/3/4/5/6/7
動作温度	0℃～＋40℃
動作湿度	10%～80%
最大外形寸法	424×177×450mm（幅/高さ/奥行き）
重さ	18kg
付属品	HDVTC-1ケーブル(1) オペレーション アンド メンテナンス マニュアル（1式）

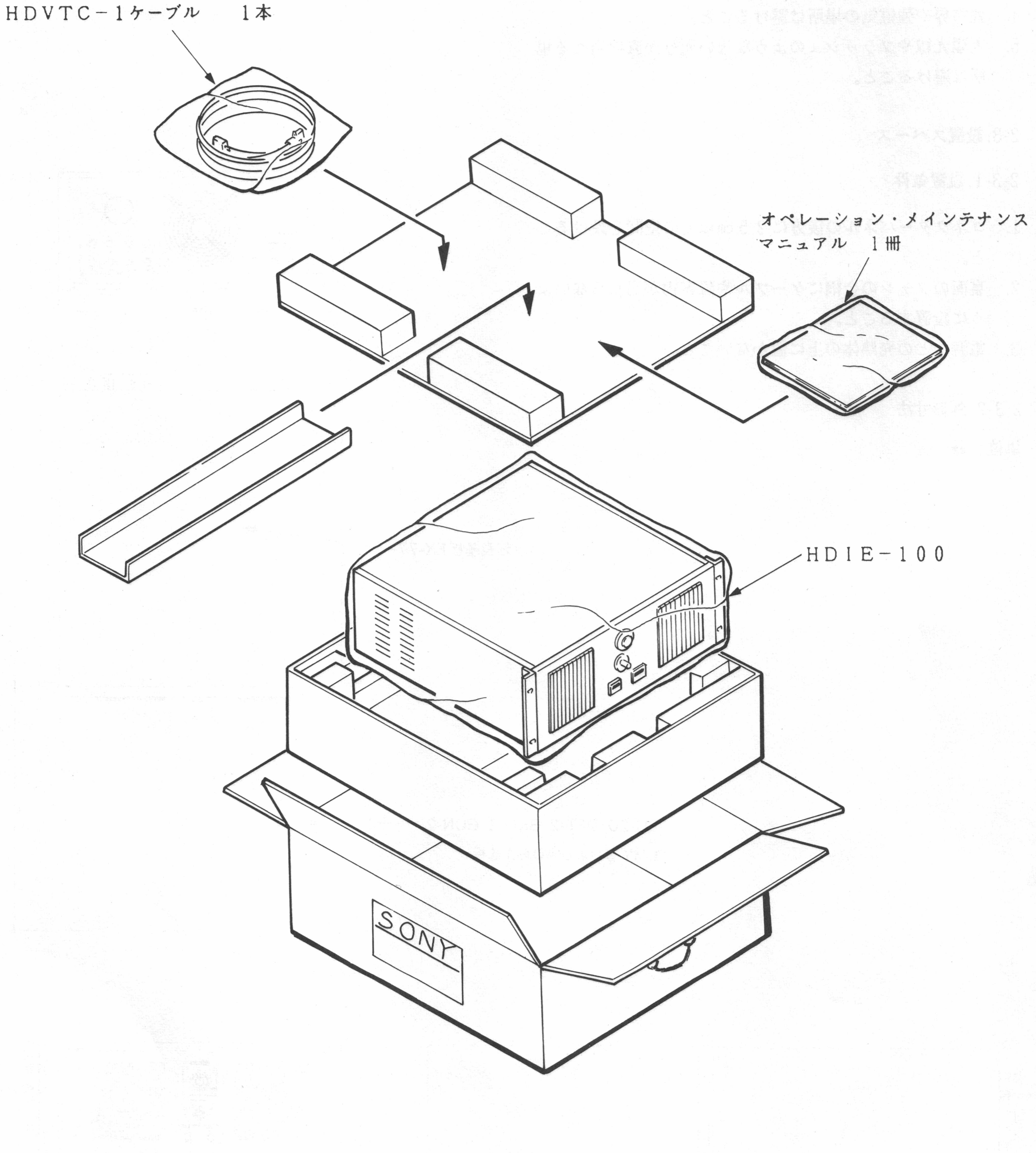
1-5. 梱包

HDVTC-1ケーブル(1)



第2章
設　置

2-1.開梱と再梱包



2-2.使用環境

1. 乾燥した風通しの良い場所であること。
2. 高温の部屋や熱源の近くは避けること。
3. ほこりや振動の多い場所は避けること。
4. 強電界や強磁気の場所は避けること。
5. 太陽光線やフラッシュのような強い光りが直接当たる場所は避けること。

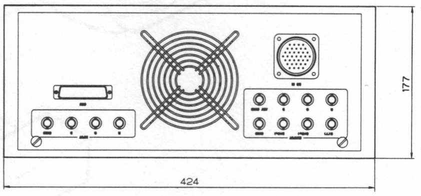
2-3.設置スペース

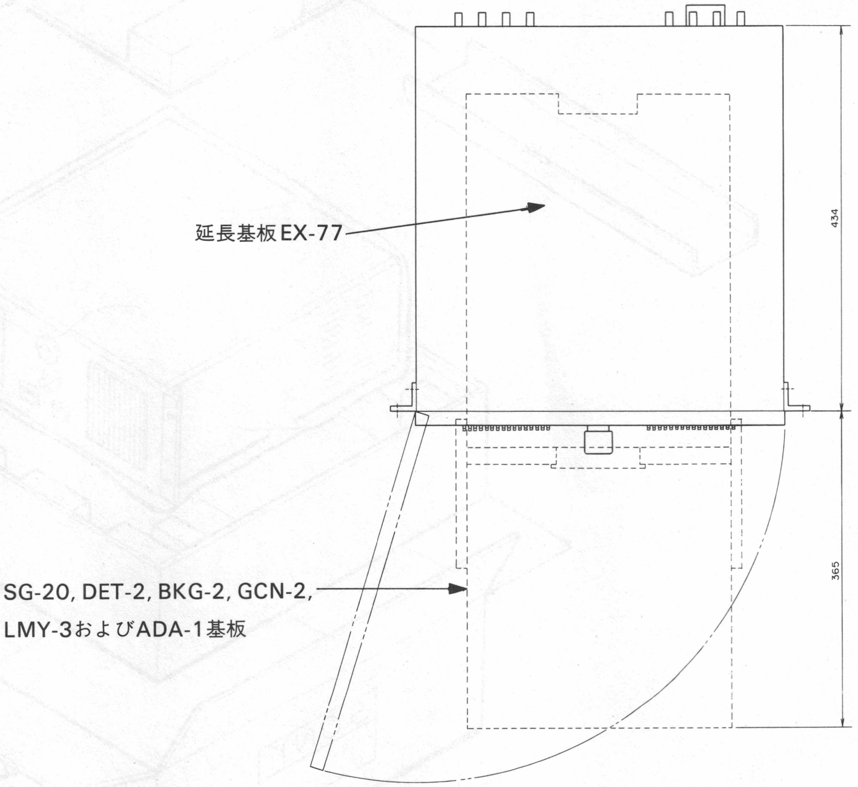
2-3-1.設置条件

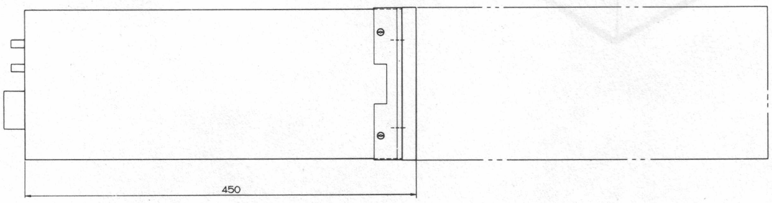
1. コネクターパネルの後方に２５cm以上の空間を設けること。
2. 裏面のファンの金網にケーブルや障害物が当たらないように設置すること。
3. 電源などの発熱体の上に置かないこと。

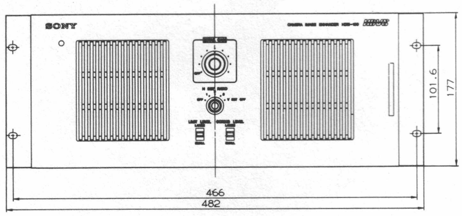
2-3-2.外形寸法

単位：mm









2-4.電源

電源電圧　各種ＤＣ電源電圧をパワーサプライユニット（HDIP-100）より，ＤＣケーブルにて供給。
－５Ｖ，４Ａ×２（各基板－５ＶＡ，－５ＶＢ）
＋12Ｖ，２Ａ×２（各基板＋12Ｖ，ＦＡＮ用）
－12Ｖ，２Ａ×１（各基板－12Ｖ用）
＋５Ｖ，２Ａ×１（各基板＋５Ｖ用）

2-5.標準付属品

延長基板　EX-77　１枚
SG-20,DET-2,BKG-2,GCN-2,LMY-3 及びADA-1 基板の点検，修理時に使用する。
注）本体の中に上記の基板同様，収納されている。

ＲＦ延長ケーブル　６本
SG-20,DET-2,BKG-2,GCN-2,LMY-3 及びADA-1 基板を延長基板で延長し，点検，修理を行う時のビデオ信号用同軸延長ケーブル
注）本体の中に上記の基板間を既に接続している。

ＨＤＶＴＣ－１ケーブル　１本
HDIE-100とHDCS-100を接続する長さ２ｍの２４Ｐ（７Ｐ同軸含む）専用ケーブル

ラックアングル　２個
ねじ　Ｂ４×12　４個
　　＋Ｋ４×10　４個
ラック取付け時に必要な把手および取付けねじ一式
本体に取付けて出荷

OPERATION AND MAINTENANCE MANUAL　１冊
HDIE-100用取扱説明書およびサービスマニュアル

2-6.アクセサリー（オプション）

ラックマウント用スライドレール　２本
日本アキュライド製　＃２０３

ラックマウント用ブラケット　４個
日本アキュライド製　＃５３５５－２０３
　　　　　　　　又は＃５３６０－２０３
注）ＥＩＡ１９インチ標準ラックの取付け位置によって使い分けて下さい。

尚，上記部品は直接下記メーカーから入手のこと。
製造元：　日本アキュライド（株）
　〒５７２　大阪府寝屋川市日新町３－９
　　☎（０７２０）２８－２０７５
　〒１０３　東京都中央区日本橋２－６－１
　　（ホッコクビル）
　　☎（０３）２４１－６９０８

2-7.適合コネクターとケーブル

ＣＣＵコネクター
本体付属のＨＤＶＴＣ－１ケーブル（長さ２ｍ,24Ｐ）を使用。
付属品以外のケーブルは使用しないこと。

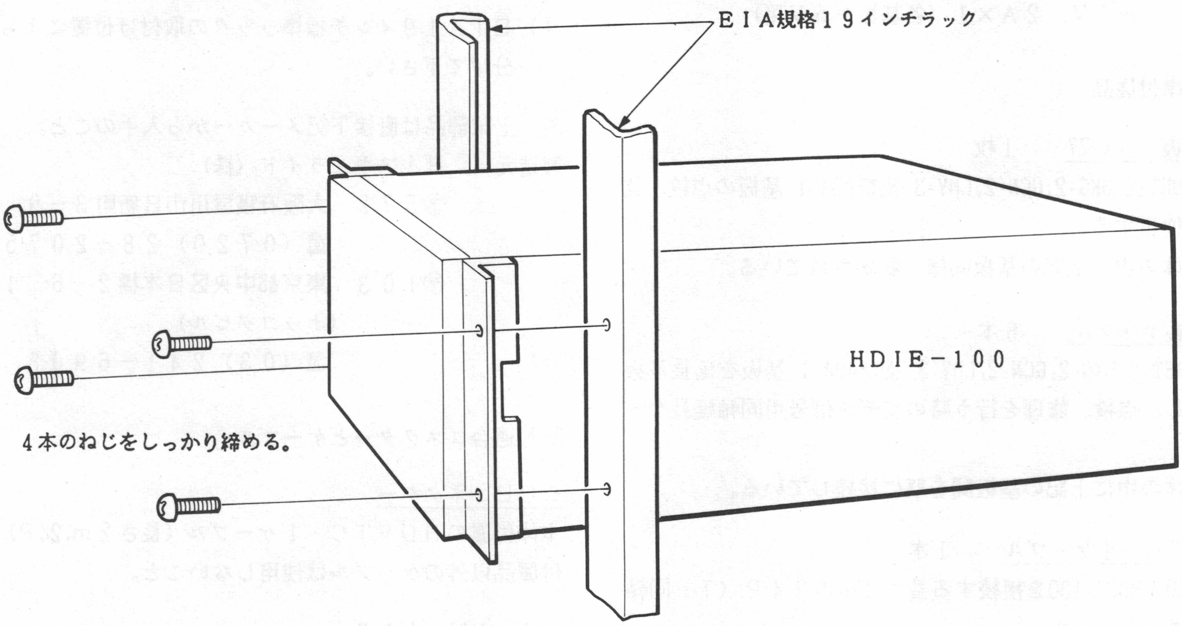
ＤＣ　ＩＮコネクター
HDIP-100付属のＤＣケーブル（長さ１ｍ，３７Ｐ）を使用。
付属品以外のケーブルは使用しないこと。

その他のコネクターはすべてＢＮＣ型である。

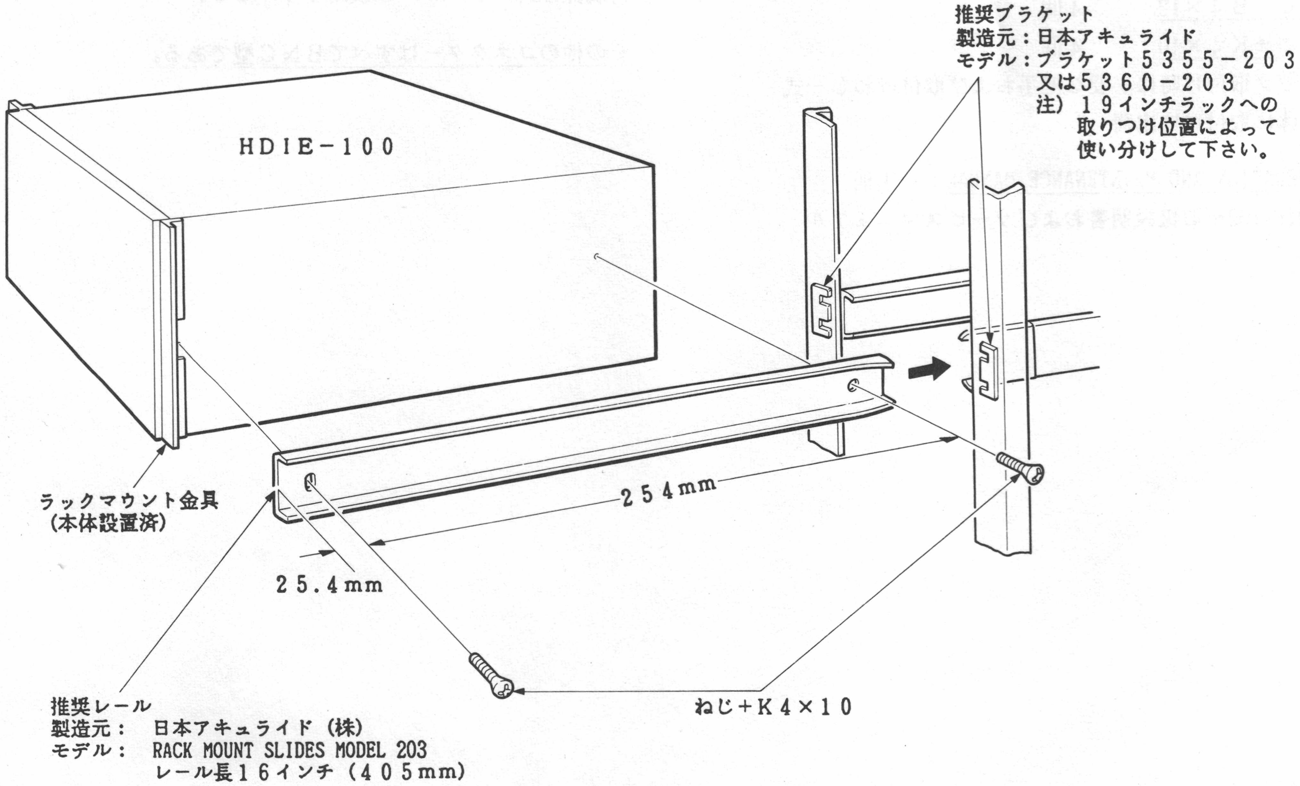
2-8.ラックマウントの方法

2-8-1.本体直接収納

ＨＤＩＥ－１００にはラックマウント金具が既に取付けられています。付属のねじ４本（＋Ｋ４×10）でＥＩＡ規格１９インチラックへ図のように取付けて下さい。

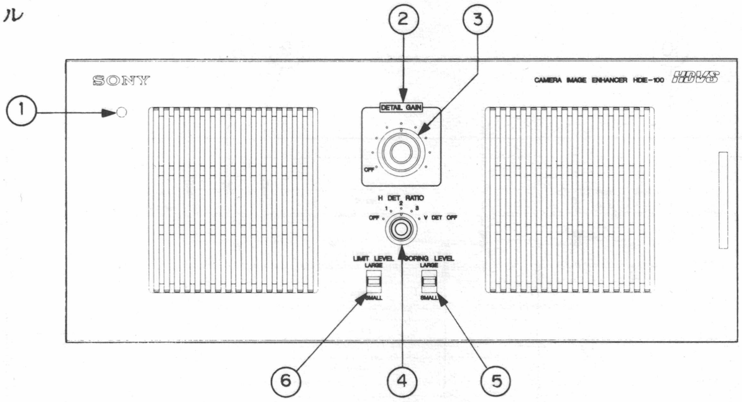


2-8-2.推奨ラックマウントの方法



2-9.スイッチ，ボリュームのセッティング

2-9-1.コントロールパネル



①POWERランプ

HDIP-100のPOWER スイッチをＯＮにすると点灯する。

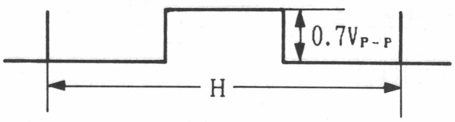
②DETAIL　GAIN表示

ＨＤＣＳ－１００内部のDIE REMOTE/LOCALスイッチの切り換えに応じてランプが点灯する。
裏面パネルのＣＣＵコネクターを専用ケーブルでＨＤＣＳ－１００に接続し，DIE REMOTE/LOCALスイッチをLOCAL モードにするとランプが点灯し，ＤＥＴＡＩＬ　ＧＡＩＮの切り換えはＤＩＥのコントロールパネルで操作することができる。

③DETAIL　GAINスイッチ

ＤＥＴＡＩＬ　ＧＡＩＮ表示が点灯している間，フロントパネルのＤＥＴＡＩＬ　ＧＡＩＮコントロールを操作することができる。　垂直・水平方向の輪郭補正の割合は，H DTL RATIO スイッチ④によって決められる。画面の輪郭補正分をどの程度強調するかをこのスイッチによって７段階に切り換える。

＊入力信号（0.７ V_{P-P}，２Ｔパルスバー）



＊測定点；G3 OUT(RF,75Ω終端) ／ MB-12基板
LIMIT LEVEL スイッチ； OFF
CORING LEVELスイッチ； OFF
H DTL RATIO スイッチ； 1

位置 ＼ 入力	DETAIL GAIN スイッチ OFF	1	2	3	4	5	6	7
0.7V_{P-P}	0.66	0.67	0.69	0.71	0.74	0.76	0.81	0.84

公差±0.02V

④H　DTL　RATIOスイッチ

GREEN 成分について垂直・水平方向の画面の輪郭補正の割合を４段階に調整することができる。
但し，垂直方向の輪郭補正量は一定とし水平方向のみを変化させる。“ V DTL OFF ”位置では垂直方向の輪郭成分はゼロになる。

＊入力信号（0.７ V_{P-P}，２Ｔパルスバー）
＊測定点；G3 OUT(RF,75Ω終端) ／ MB-12基板
LIMIT LEVEL スイッチ； OFF
CORING LEVELスイッチ； OFF
DETAIL GAIN スイッチ； 5

位置 ＼ 入力	H DETAIL RATIO スイッチ OFF	1	2	3	V DTL OFF
0.7V_{P-P}	0.66	0.76	0.86	0.88	0.86

公差±0.035 V

⑤CORING　LEVELスイッチ

輪郭補正分の低振幅部分にはノイズが多く含まれている場合が多い。ノイズの大小に応じてLARGE/SMALL いずれかに切り換える。

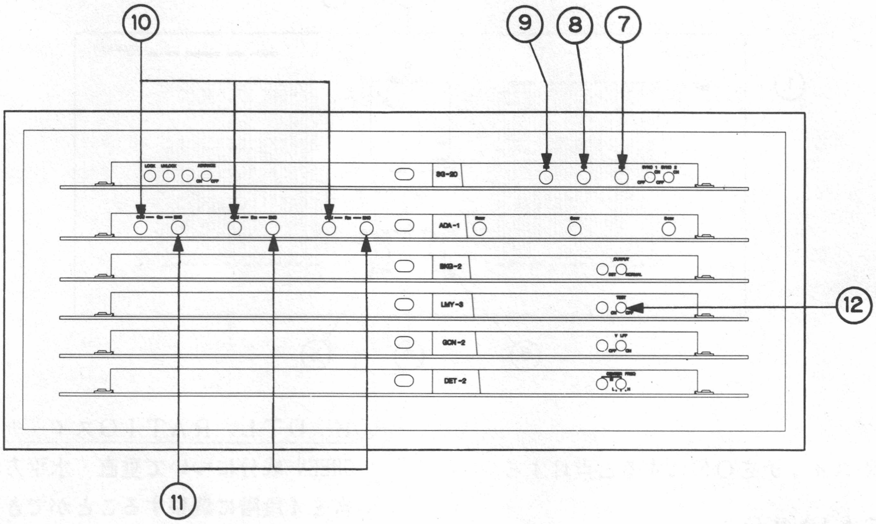
⑥LIMIT　LEVELスイッチ

垂直・水平方向の輪郭補正分の中，大振幅の輪郭は強調せず比較的小振幅部分のみを強調する場合にLARGE 側に切り換える。

＊測定点；G3 OUT(RF,75Ω終端) ／ MB-12基板
LIMIT LEVEL スイッチ； OFF
H DTL RATIO スイッチ； 2
DETAIL GAIN スイッチ； 5

MODE ＼ 位置	CORING	LIMIT
LARGE	0.80±0.035V_{P-P}	0.82±0.035V_{P-P}
SMALL	0.86±0.035V_{P-P}	0.86±0.035V_{P-P}

2-9-2.入力系



【SG－20基板】

⑦B　INコネクター（RFコネクター）
0.7V_{P-P}　75Ω
HDIE－100で輪郭補正されたNON　COMPの
BLUE　VIDEO信号が入力される。

⑧G　INコネクター（RFコネクター）
0.7V_{P-P}　75Ω
HDIE－100で輪郭補正されたNON　COMPの
GREEN　VIDEO信号が入力される。

⑨R　INコネクター（RFコネクター）
0.7V_{P-P}　75Ω
HDIE－100で輪郭補正されたNON　COMPの
RED　VIDEO信号が入力される。

【ADA－1基板】

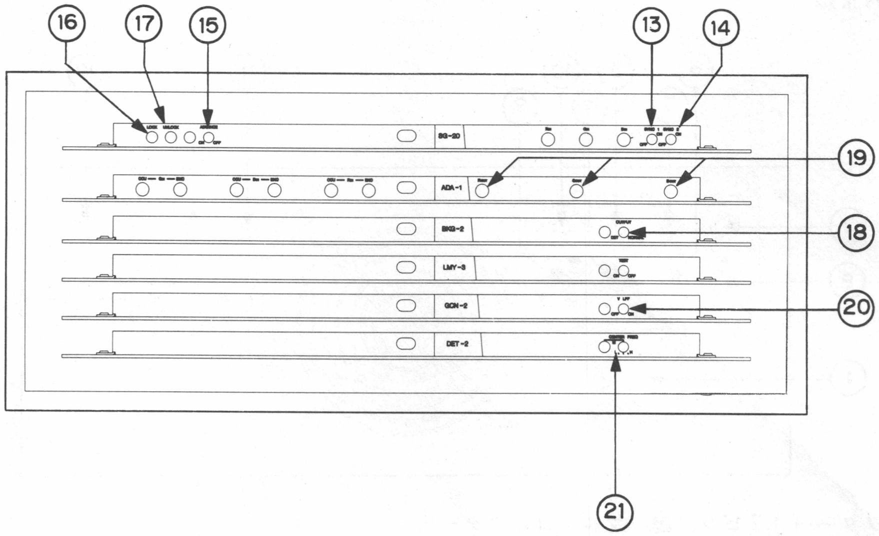
⑩CCU－B　INコネクター（RFコネクター）
CCU－G　INコネクター（RFコネクター）
CCU－R　INコネクター（RFコネクター）
0.7V_{P-P}　75Ω
HDCS－100（カメラ）より，NON　COMPの
GREEN／BLUE／RED　VIDEO信号が入力
される。

⑪BNC－B　INコネクター（RFコネクター）
BNC－G　INコネクター（RFコネクター）
BNC－R　INコネクター（RFコネクター）
0.7V_{P-P}　75Ω
コネクターパネルのINPUT・BNC端子よりNON
COMPのGREEN／BLUE／RED　VIDEO
信号が入力される。

【LMY－3基板】

⑫TEST・ON／OFFスイッチ
ONモードでは，内部信号発生器によりリニアリティー波
形を入力ビデオ信号の代わりに通す。

2-9-3. 出力系



【ＳＧ－２０基板】

⑬ＳＹＮＣ　１・ＯＮ／ＯＦＦスイッチ
ＯＮモードでは，コネクターパネルＯＵＴＰＵＴ・ＢＮＣ端子の上段のビデオ信号にＳＹＮＣを付加する。

⑭ＳＹＮＣ　２・ＯＮ／ＯＦＦスイッチ
ＯＮモードでは，コネクターパネルＯＵＴＰＵＴ・ＢＮＣ端子の下段のビデオ信号にＳＹＮＣを付加する。

⑮ＡＤＶＡＮＣＥ・ＯＮ／ＯＦＦスイッチ
ＯＮモードでは，このスイッチ横のＬＥＤが点灯し，ＯＵＴＰＵＴ端子のＳＹＮＣはＲＥＦＥＲＥＮＣＥ ＳＹＮＣと同位相になりＡＤＶＡＮＣＥ　ＳＹＮＣは１Ｈ＋1.03μs進む。

⑯ＬＯＣＫ表示
ＲＥＦＥＲＥＮＣＥ信号発生源とＨＤＩＥ－１００が同期していると点灯する。

⑰ＵＮＬＯＣＫ表示
ＲＥＦＥＲＥＮＣＥ信号が入力されていないか，又は入力されていても同期信号の形体が不一致（Ｎ／Ｓ方式混同）で同期が取れないとき，点滅あるいは点灯する。

【ＢＫＧ－２基板】

⑱ＯＵＴＰＵＴ・DTL/NORMALスイッチ
ＤＴＬモードでは，輪郭成分（DETAIL）のみが出力される。

【ＡＤＡ－１基板】

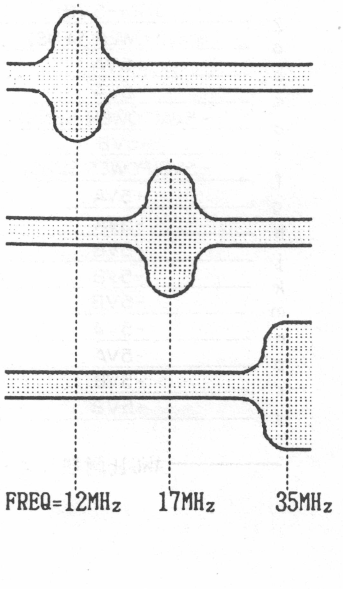
⑲Ｇ　ＯＵＴコネクター（ＲＦコネクター）
Ｂ　ＯＵＴコネクター（ＲＦコネクター）
Ｒ　ＯＵＴコネクター（ＲＦコネクター）
0.7 V_{P-P}　　７５Ω
ＮＯＮ　ＣＯＭＰのＧＲＥＥＮ／ＢＬＵＥ／ＲＥＤ ＶＩＤＥＯ信号が出力される。

【ＧＣＮ－２基板】

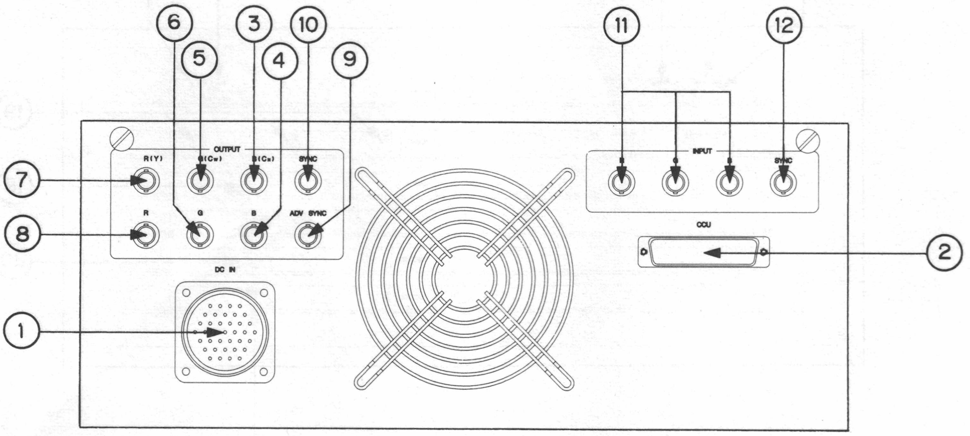
⑳Ｖ　ＬＰＦ・ＯＮ／ＯＦＦスイッチ
ＯＮモードでは，画像の垂直方向の成分より得られた輪郭成分（Ｖ－ＤＥＴＡＩＬ）にローパスフィルターをかける。

【ＤＥＴ－２基板】

㉑ＣＥＮＴＥＲ　ＦＲＥＱ　Ｌ／Ｍ／Ｈスイッチ
エンハンス中心周波数をＬ；12ＭＨz，Ｍ；17ＭＨz，Ｈ；35ＭＨz のいずれかに切り換える。
＊スィープ波形を入力



2-9-4.コネクターパネル



①DC　INコネクター（37ピン，雄，マルチコネクター）

HDIP－100と本機を接続し，HDIP－100より各種レギュレータ出力電圧を供給される。

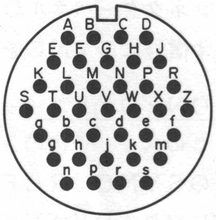
付属の37ピンDCケーブル（1m）で接続する。

HDIP-100	37-PIN CABLE		HDIE-100
A	+12V	→	A
B	GND(+12V)	→	B
C	-12V	→	C
D	GND(-12V)	→	D
E	+12V(FAN)	→	E
F	GND(FAN)	→	F
G		—	G
H	+5V	→	H
J	GND(+5V)	→	J
K	GND(-5VA)	→	K
L	GND(-5VA)	→	L
M	GND(-5VA)	→	M
N	GND(-5VB)	→	N
P	GND(-5VB)	→	P
R	GND(-5VB)	→	R
S	GND(-5VA)	→	S
T	GND(-5VA)	→	T
U	GND(-5VA)	→	U
V		—	V
W	GND(-5VB)	→	W
X	GND(-5VB)	→	X
Z	GND(-5VB)	→	Z
a	GND(POWER SENS)	←	a
b	-5VA	→	b
c	-5VA	→	c
d	-5VA(POWER SENS)	←	d
e	-5VB	→	e
f	-5VB(POWER SENS)	←	f
g	-5VA	→	g
h	-5VA	→	h
j	-5VB	→	j
k	-5VB	→	k
m	-5VB	→	m
n	-5VA	→	n
p	-5VA	→	p
r	-5VB	→	r
s	-5VB	→	s

──── AWG16耐熱ビニール電線(CSA,TR-64)

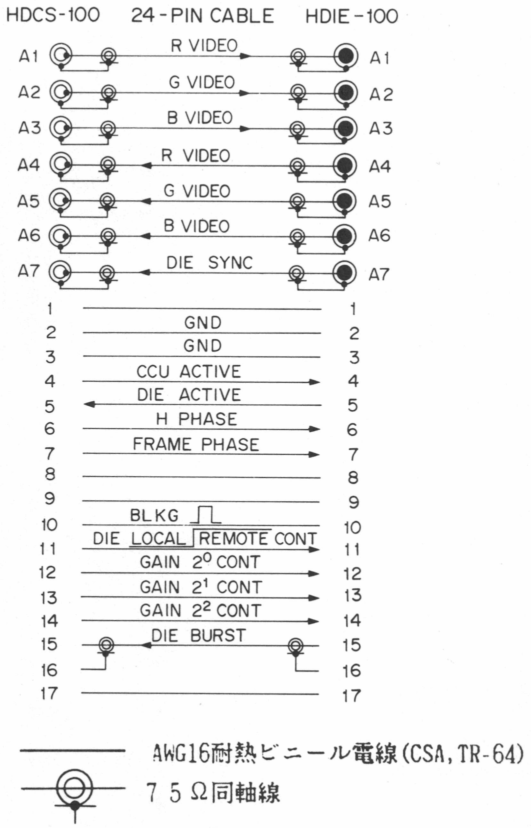
RECEPTACLE ON HDIE-100

(EXT VIEW)

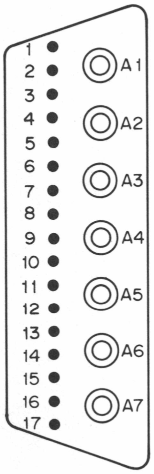


②ＣＣＵコネクター（２４ピン，雄，ＤＤＭコネクター）

ＨＤＣＳ－１００と本機を接続するためのコネクター。
付属のＨＤＶＴＣ－１ケーブル（２ｍ，24Ｐ）で接続する。
２ｍ以上のケーブルを使用してはいけない。



RECEPTACLE ON HDIE-100
(EXT VIEW)



ＨＤＩＥ－１００入力信号

Ｒ／Ｇ／Ｂ　ＶＩＤＥＯ	0.７V_{P-P} ７５Ω　同期無 正極性
ＣＣＵ　ＡＣＴＩＶＥ	ＴＴＬレベル ＣＣＵ　ＡＣＴＩＶＥ；ＨＩＧＨ
ＤＩＥ　ＬＯＣＡＬ／ＲＥＭＯＴＥ　ＣＯＮＴ	ＴＴＬレベル ＬＯＣＡＬモード；ＨＩＧＨ
Ｈ　ＰＨＡＳＥ	29.6μs周期 本機と接続するカメラから供給されるＨ位相信号。
ＦＲＡＭＥ　ＰＨＡＳＥ	16.68m周期 本機と接続するカメラから供給されるＦＲＡＭＥ信号。
ＧＡＩＮ2^0,2^1,2^2 ＣＯＮＴ	ＴＴＬレベル ＣＣＵからのＤＥＴＡＩＬゲインコントロール信号で３つのコントロール信号の組合せにより７段階に切り換える。

ＨＤＩＥ－１００出力信号

Ｒ　ＶＩＤＥＯ	0.７V_{P-P} ７５Ω　同期無 正極性
Ｇ　ＶＩＤＥＯ	0.７V_{P-P} ７５Ω　同期無 正極性
Ｂ　ＶＩＤＥＯ	0.７V_{P-P} ７５Ω　同期無 正極性
ＤＩＥ　ＡＣＴＩＶＥ	ＴＴＬレベル ＤＩＥ　ＡＣＴＩＶＥ；ＨＩＧＨ
ＤＩＥ　ＳＹＮＣ	0.３V_{P-P} ７５Ω　同期負
ＤＩＥ　ＢＵＲＳＴ	0.３V_{P-P} ７５Ω

③B　OUTPUT（BNCコネクター）

④B　OUTPUT（BNCコネクター）
0.7V／1.0V_{P-P} 75Ω
SYNC　；0.3V_{P-P} 75Ω(ON/OFF 切り換え可能)
BURST；0.3V_{P-P} 75Ω(ON/OFF 切り換え可能)

⑤G　OUTPUT（BNCコネクター）

⑥G　OUTPUT（BNCコネクター）
0.7V／1.0V_{P-P} 75Ω
SYNC　；0.3V_{P-P} 75Ω(ON/OFF 切り換え可能)
BURST；0.3V_{P-P} 75Ω(ON/OFF 切り換え可能)

⑦R　OUTPUT（BNCコネクター）

⑧R　OUTPUT（BNCコネクター）
0.7V／1.0V_{P-P} 75Ω
SYNC　；0.3V_{P-P} 75Ω(ON/OFF 切り換え可能)
BURST；0.3V_{P-P} 75Ω(ON/OFF 切り換え可能)

⑨ADV　SYNC　OUTPUT（BNCコネクター）
0.3V_{P-P}　75Ω
VTRを基準信号よりも1H進めて再生させるためにHDIE－100からVTRへ送り出しするコンポジット同期信号用コネクター。SYNCの位相はREF信号よりも1H＋1.03μs進んでいる。VTRのSYNC　INあるいはVIDEO　IN端子へ接続する。

⑩SYNC　OUTPUT（BNCコネクター）
0.3V_{P-P}　75Ω　同期負

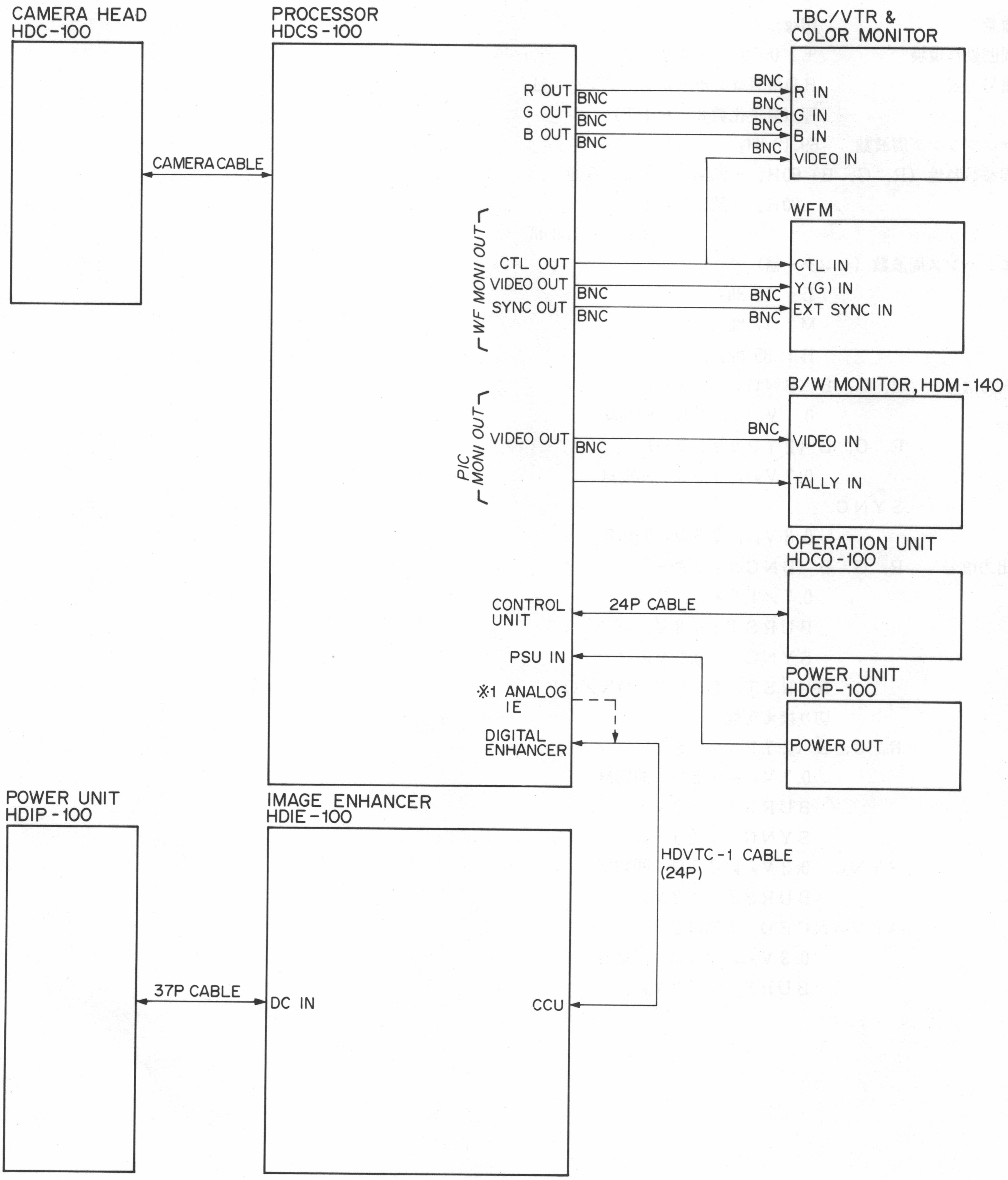
⑪R／G／B　INPUT（BNCコネクター）
0.7V_{P-P} 75Ω　同期無
正極性

⑫SYNC　INPUT（BNCコネクター）
0.3V_{P-P} 75Ω
負極性

③～⑫は，R／G／B入出力端子付のVTRやモニターと接続する。

2-10. 接続例

HDVSカメラシステム



＊1. ANALOG　IE；HDCS－100内蔵

2. 設置

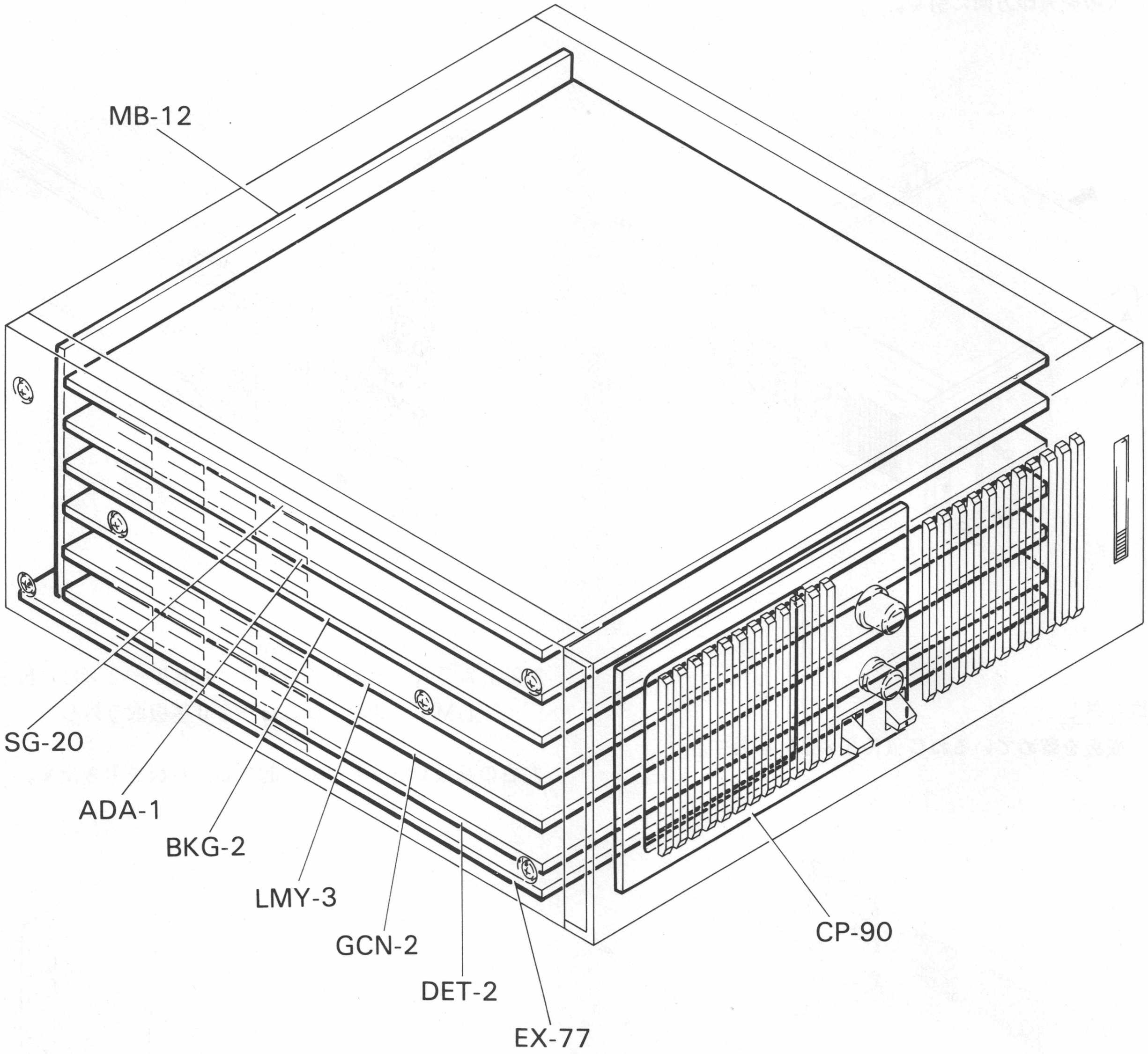
2-11. 仕様

外形寸法　　424(幅) ×450(奥行) ×177(高さ)

重量　18kg
周囲動作環境　＋１０゜Ｃ～＋４０゜Ｃ
信号方式　ＨＤ信号コンポーネントデジタル処理（量子化数８－ＢＩＴ）
サンプリング周波数　69.12 MHz
周波数特性（Ｒ，Ｇ，Ｂ）60Ｈｚ ～20ＭＨｚ ；±０.５dB
20Ｈｚ ～25ＭＨｚ ；
－３.０～＋１.０dB
エンハンス周波数（センター値）
Ｌ； 12 MHz
Ｍ； 17 MHz
Ｈ； 35 MHz
入力信号　Ｒ，Ｇ，Ｂ（ＢＮＣコネクター）
0.7 V_{P-P} ７５Ω　同期無
Ｒ，Ｇ，Ｂ（２７Ｐコネクター）
0.7 V_{P-P} ７５Ω　同期無
ＳＹＮＣ
0.3 V_{P-P} ７５Ω　同期負
出力信号　Ｒ，Ｇ，Ｂ（ＢＮＣコネクター）
0.7／1.0 V_{P-P} ７５Ω
ＢＵＲＳＴ；0.3 V_{P-P}
ＳＹＮＣ　；0.3 V_{P-P}
ＢＵＲＳＴ，ＳＹＮＣ　ＯＮ／ＯＦＦ
切り換え可能
Ｒ，Ｇ，Ｂ（２７Ｐコネクター）
0.7 V_{P-P} ７５Ω　同期無
ＢＵＲＳＴ；0.3 V_{P-P}
ＳＹＮＣ　；0.3 V_{P-P}
ＳＹＮＣ　0.3 V_{P-P} ７５Ω　同期負
ＢＵＲＳＴ；0.3 V_{P-P}
ＡＤＶＡＮＣＥＤ　ＳＹＮＣ
0.3 V_{P-P} ７５Ω　同期負
ＢＵＲＳＴ；0.3 V_{P-P}

第3章
サービスインフォメーション

3-1. プリント基板配置図



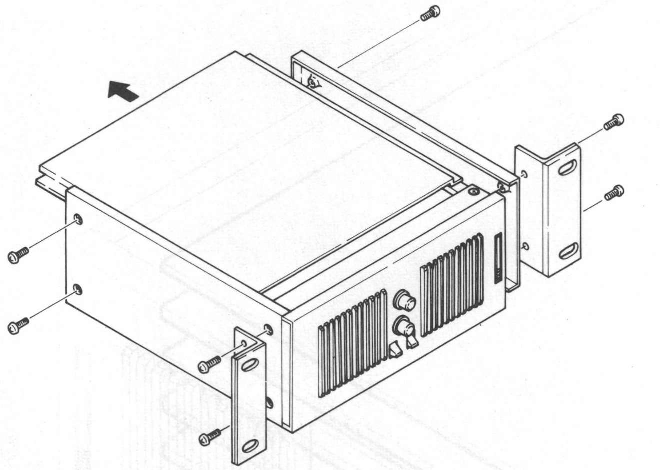
3-2.外装取り外し

3-2-1.側板／天板／底板取り外し

<u>側板／天板取り外し</u>

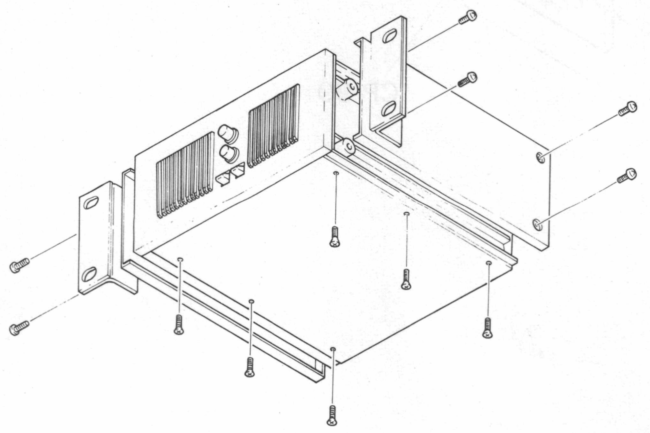
（1）側板を留めているねじB４×６，B３×６（左右各２個を外し、側板を外す。）

（2）天板を矢印方向に引く。



<u>底板取り外し</u>

（3）底板を留めているねじ（K３×５）を外す。

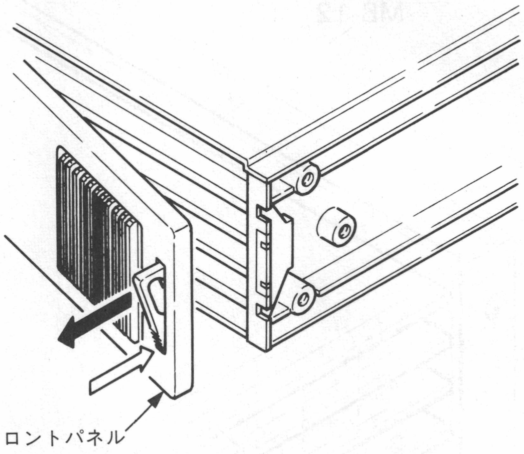


3-2-2.フロントパネルの開閉

ADA−１／BKG−２／DET−２／GCN−２／LMY−３およびSG−２０基板の点検・修理時に行う。

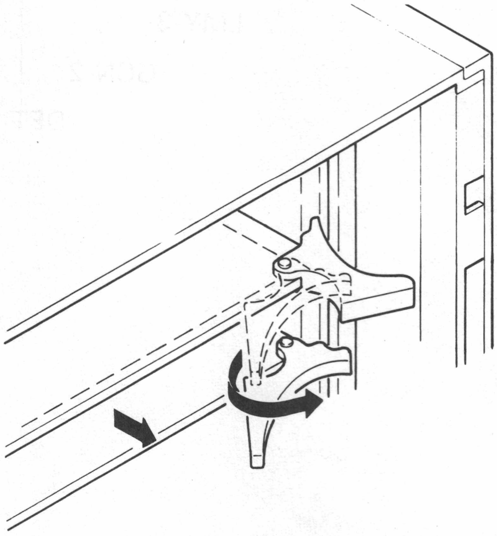
（1）3-2-1.側板／天板／底板取り外しを参照して，右側板を外す。

（2）フロントパネルの右側面のねじB３×６を外し，フロントパネルを開く。



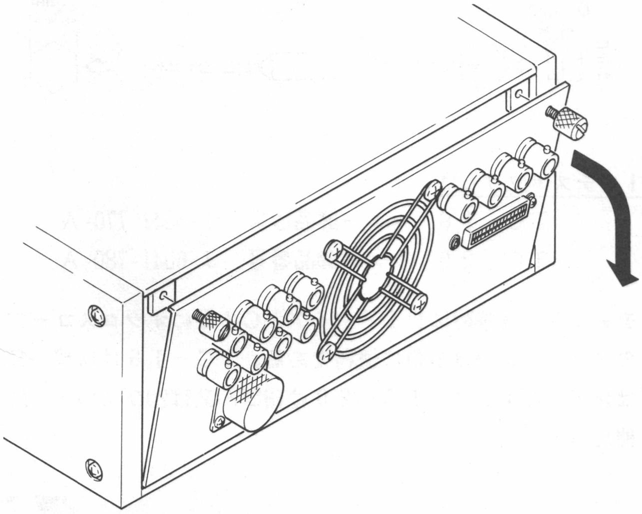
3-2-3.ADA−１／BKG−２／DET−２／GCN−２／LMY−３およびSG−２０基板取り外し

左右の基板レバーを手前に起こし，基板を引き出す。



3-2-4. コネクターパネル開閉

ねじ２個をゆるめ矢印方向にコネクターパネルを開く。



3-3. サービス上の注意事項

3-3-1. ＡＤＡ－１／ＢＫＧ－２／ＤＥＴ－２／ＧＣＮ－２／ＬＭＹ－３／ＳＧ－２０基板取り付けの注意事項

当機のＡＤＡ－１，ＢＫＧ－２，ＤＥＴ－２，ＧＣＮ－２，ＬＭＹ－３およびＳＧ－２０基板は非常に大きく取り付け時左右の基板ガイドレールに差し込んでもしなった状態となりコネクターに差し込まれない場合があります。
基板の中心部を軽く持ち上げながら差し込むと良い。

3-3-2. ＳＧ－２０基板・ＬＥＤ（GENLOCK）の点灯

ＣＣＵ又はＶＴＲから同期信号が供給されていることをＳＧ－２０基板の側面パネルのＬＥＤの点灯により確認することができる。

3-3-3. 延長基板（ＥＸ－７７）の取扱いの注意事項

延長基板（ＥＸ－７７）はSG-20, DET-2, BKG-2, GCN-2, LMY-3およびADA-1 基板の点検・修理時に使用する。
この延長基板は，これらの基板同様，本体の一番下に収納されている。点検・修理の際には取り外して使用する。
尚，点検・修理が終わりましたならば，紛失防止のため再び所定の位置へ戻しておくこと。

3-3-4. ＰＲＯＭ　ＩＣ

ＰＲＯＭ　ＩＣには，オリジナル品名の末尾に下表に示す品名が記載されています。
オリジナル品名のみ（プログラム化されていない）は絶対に使用しないこと。尚，各基板に使われているＰＲＯＭ　ＩＣは全てソケット化している。

基板名	名　称	Ref. No.
ＢＫＧ－２	MCM10149L-BLP1 MCM10149L-BLP2 MCM10149L-BLM1 MCM10149L-BLM2	IC10A, 9C, 10D, 9F, 10J, 9L IC 8A 7C, 8D, 7F, 8J, 7J IC 9A, 8C, 9D, 8F, 9J, 8L IC 7A, 6C, 7D, 6F, 7J, 6L
ＤＥＴ－２	MCM10149L-LGD1 MCM10149L-LGD2	IC15J, 15L IC15K, 15M
ＧＣＮ－２	MCM10149L-HDG1 MCM10149L-HDG2 MCM10149L-HDG3 MCM10149L-HDG4 MCM10149L-LCS1 MCM10149L-LCS2 MCM10149L-LCL1 MCM10149L-LCL2 MCM10149L-DGA1 MCM10149L-DGA2 MCM10149L-DGA3 MCM10149L-DGA4 MCM10149L-DGA5 MCM10149L-DGA6 MCM10149L-DGA7 MCM10149L-DGA8	IC3E, 6E IC2E, 5E IC3F, 6F IC2F, 5F IC8J, 8L IC8K, 8M IC9J, 9L IC9K, 9M IC14J, 14L IC14K, 14M IC13J, 13L IC13K, 13M IC12J, 12L IC12K, 12M IC11J, 11L IC11K, 11M
ＳＧ－２０	MB7138-S0A MB7138-S1A MB7138-SH3 MBM27C32A-SV3	IC65, 67 IC61, 63 IC70 IC102

3-3-5.補修用部品注意事項

（1）安全重要部品

> 回路図，分解図，電気部品表中，⚠印及び　　　で囲まれた部品は安全性を維持するために重要な部品である。従って，これらの部品を交換するときには必ず指定の部品と交換すること。

（2）部品の共通化

ソニーから供給される部品はセットに実装されているものと異なることがある。これは部品の共通化，改良等によるものである。分解図や電気部品表中には現時点での共通化された部品が記載されている。

（3）部品の在庫

部品表中，（　）で示されている部品は交換頻度が低い部品であるので在庫していないことがあり，納期が長くなることがある。

（4）コンデンサ，インダクター，抵抗の単位

回路図，分解図，電気部品表中，特に明記したものを除き，下記の単位は省略されている。

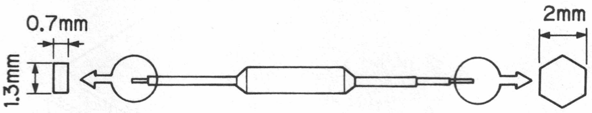
コンデンサ　；　μF

インダクター；　μH

抵抗　　　　；　Ω

3-4.治工具

調整用ドライバー　　ソニー部品番号　7-700-733-01

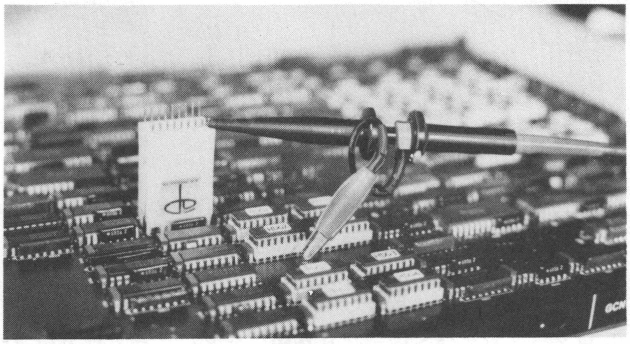


ＩＣテストクリップ

ＴＣ－１６　ソニー部品番号　J-6041-770-A

ＴＣ－２０　ソニー部品番号　J-6041-780-A

チェック，調整時にＤＩＰタイプＩＣの足にオシロスコープのプローブをかけるのに便利である。ＴＣ－１６は14ピン又は16ピンのＩＣに，ＴＣ－２０は18ぴん又は20ぴんのＩＣに使える。



SECTION 6
BLOCK DIAGRAMS

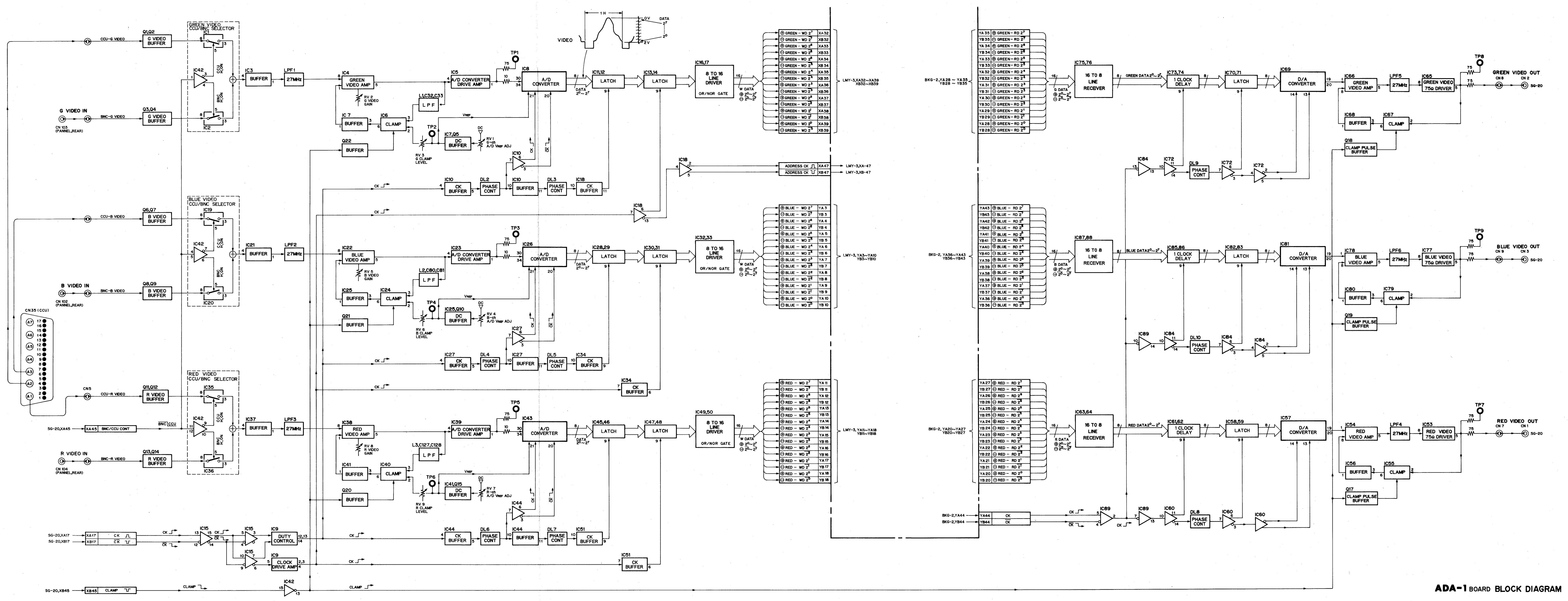
OVERALL BLOCK DIAGRAM

BLOCK DIAGRAM SG-20 | SG-20 BLOCK DIAGRAM

SG-20 (SYNC AND BLACK BURST GEN, VIDEO OUTPUT AMPLIFIER) BLOCK DIAGRAM

SG-20 BOARD BLOCK DIAGRAM
HDE-100 (S)
HDE-100 (N)

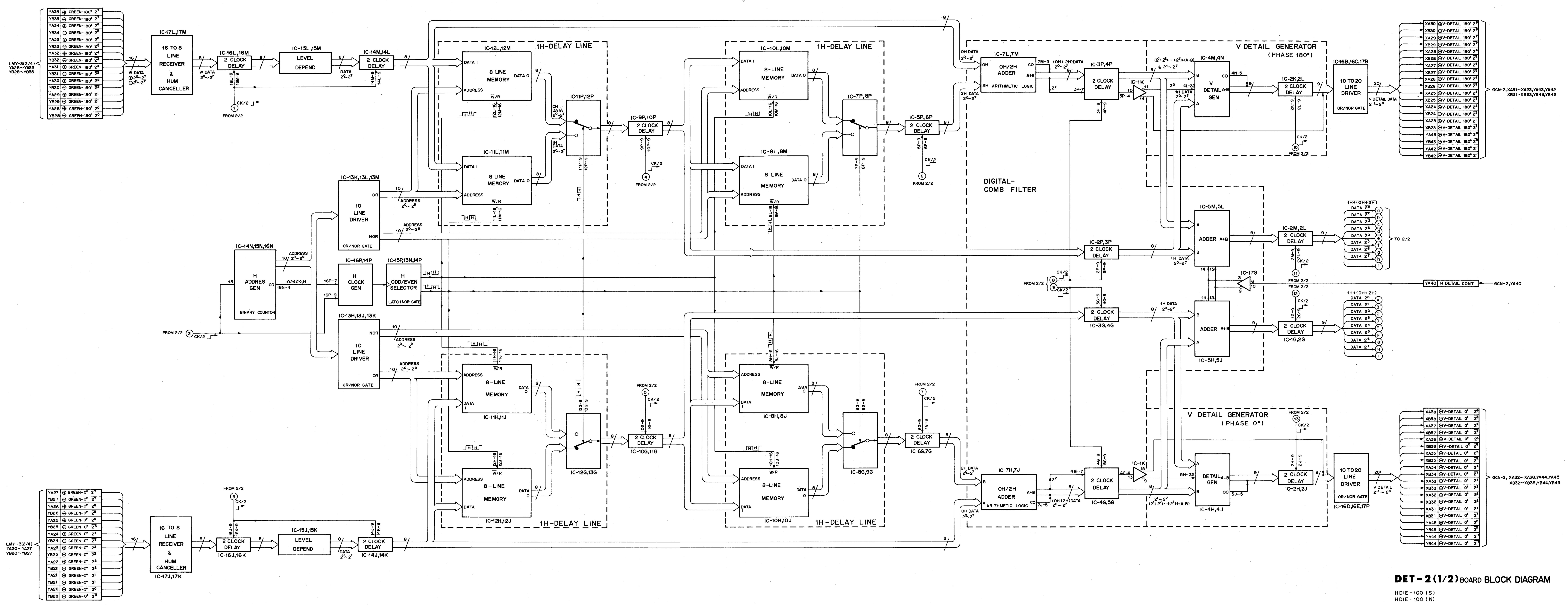
ADA-1 (VIDEO-A/D AND D/A CONVERTER) BLOCK DIAGRAM



ADA-1 BOARD BLOCK DIAGRAM

HDIE-100 (S)
HDIE-100 (N)

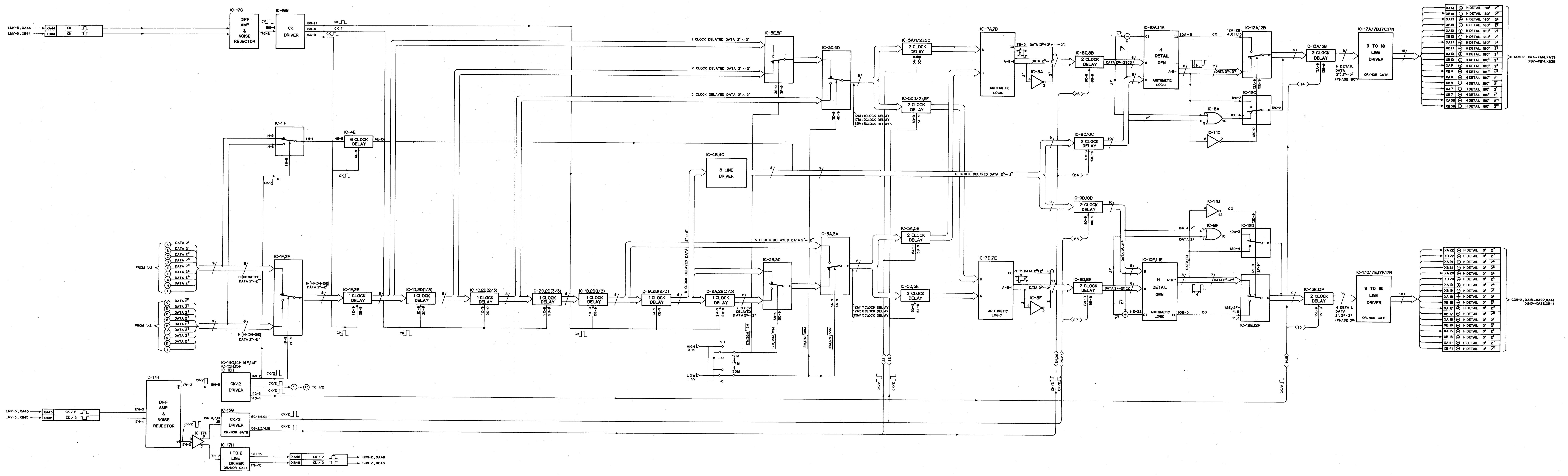
DET-2 (1/2) (1H-DELAY LINE & V DETAIL GEN) BLOCK DIAGRAM



DET-2 (1/2) BOARD BLOCK DIAGRAM

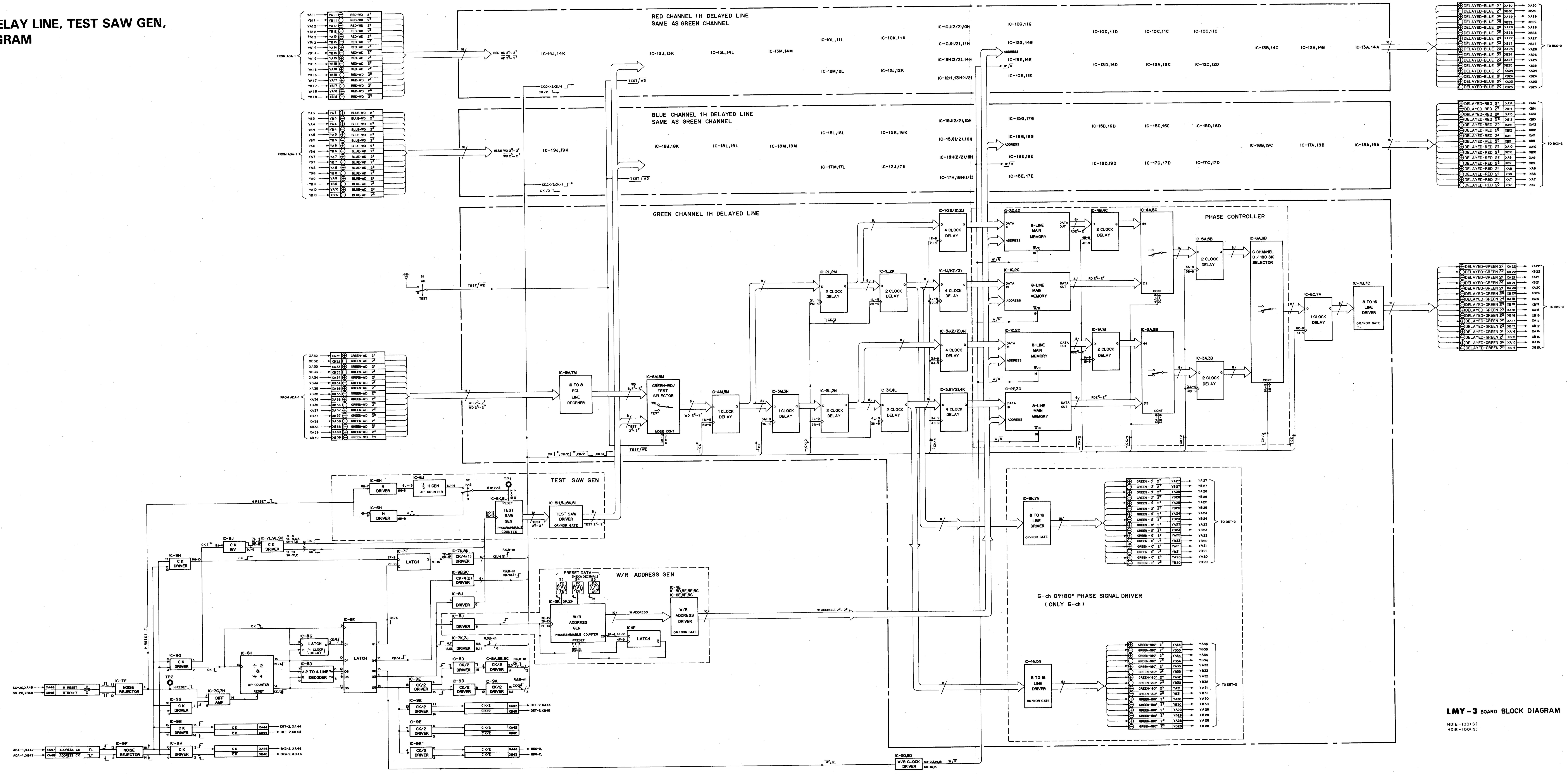
HDIE-100 (S)
HDIE-100 (N)

DET-2 (2/2) (H DETAIL GEN) BLOCK DIAGRAM



DET-2(2/2) BOARD BLOCK DIAGRAM
HDIE-100(S)
HDIE-100(N)

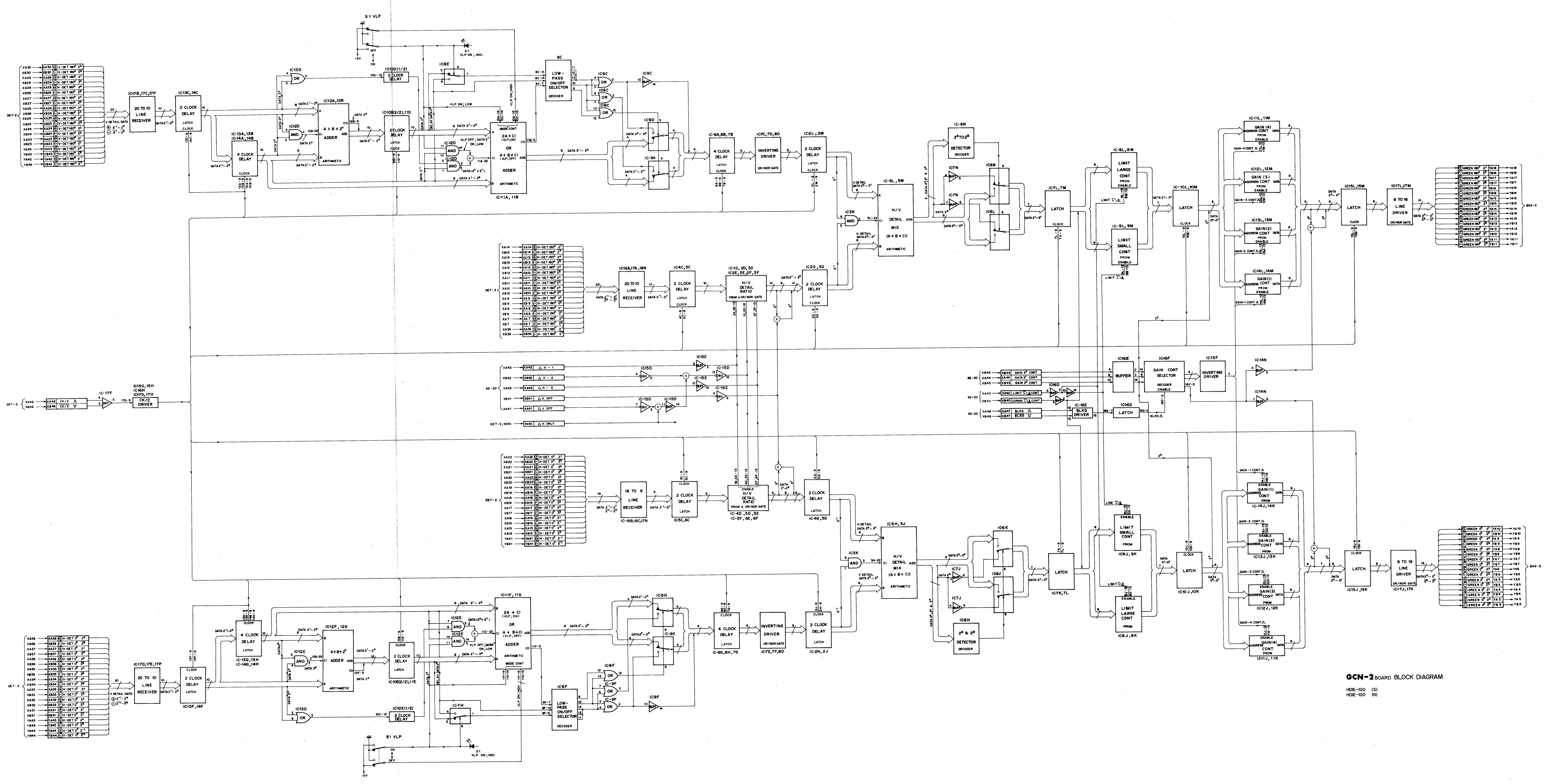
LMY-3 (GREEN-0°/180° PHASE GEN, 1H-DELAY LINE, TEST SAW GEN, CLOCK GEN & ADDRESS GEN) BLOCK DIAGRAM



LMY-3 BOARD BLOCK DIAGRAM

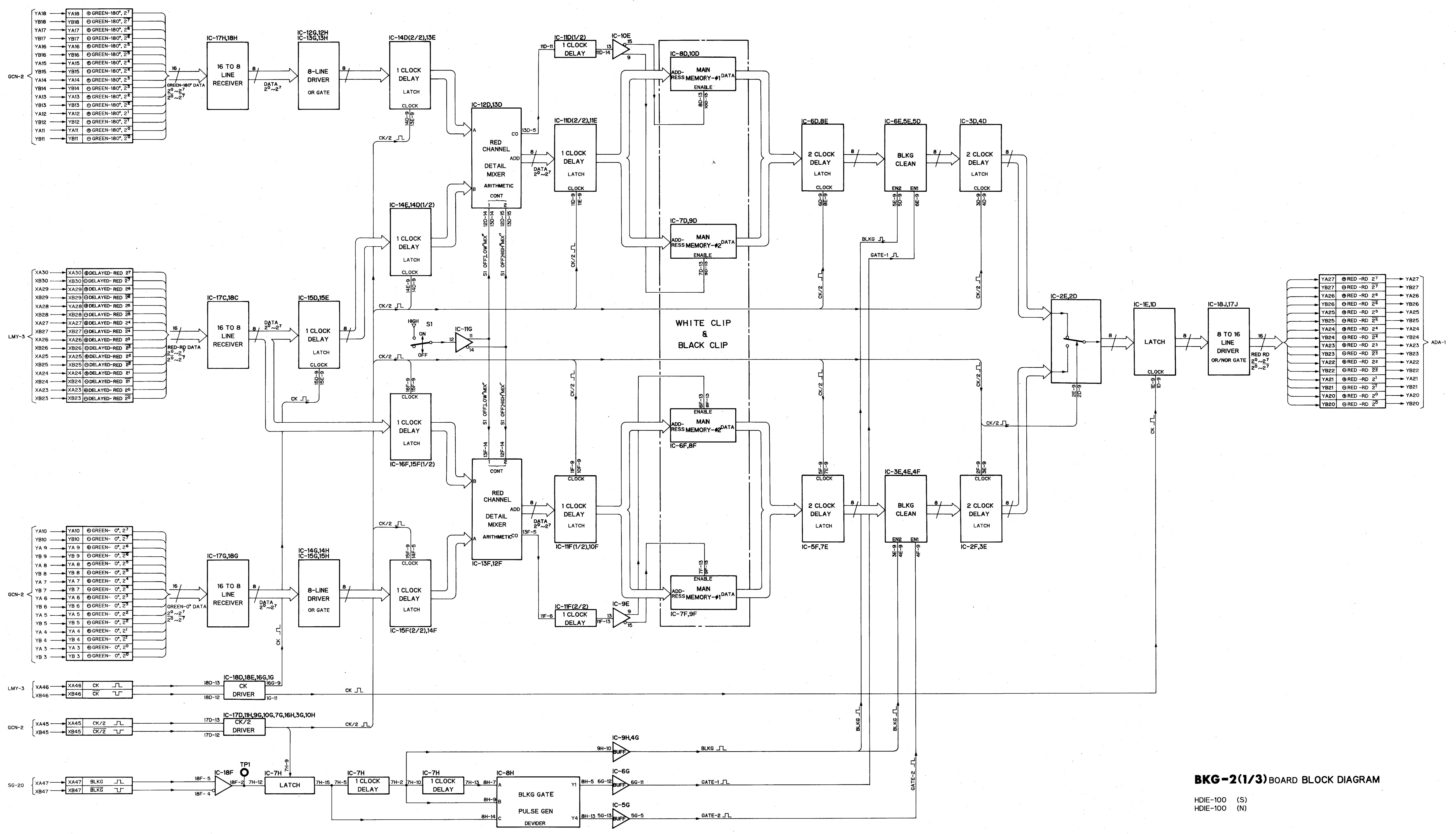
HDIE-100(S)
HDIE-100(N)

GCN-2 (H/V DETAIL MIX)
BLOCK DIAGRAM



GCN-2 BOARD BLOCK DIAGRAM
HDIE-100 (S)
HDIE-100 (N)

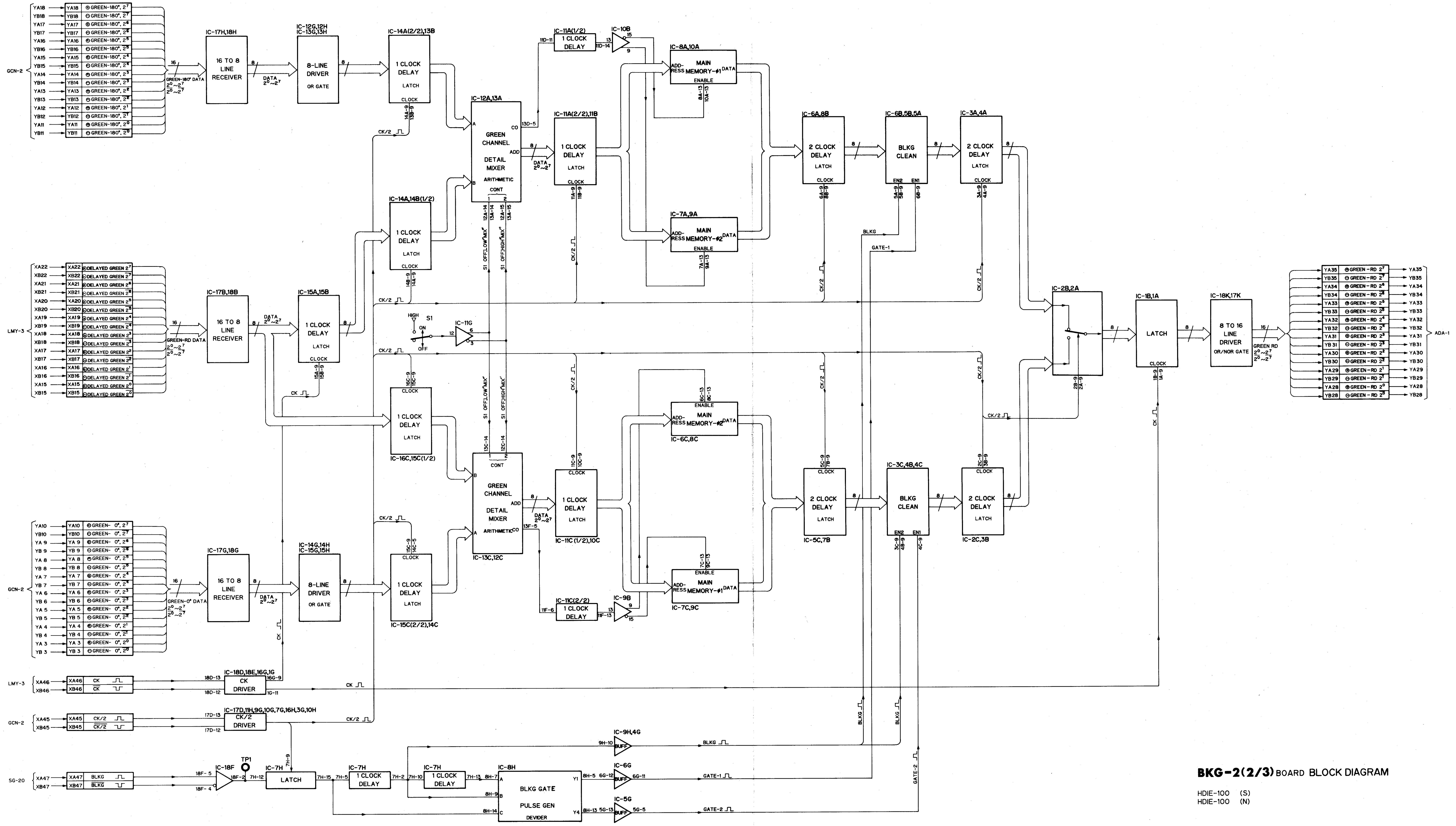
BKG-2 (1/3) (RED CHANNEL DETAIL MIXER) BLOCK DIAGRAM



BKG-2(1/3) BOARD BLOCK DIAGRAM

HDIE-100 (S)
HDIE-100 (N)

BKG-2 (2/3) (GREEN CHANNEL DETAIL MIXER) BLOCK DIAGRAM



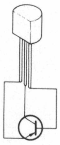
BKG-2(2/3) BOARD BLOCK DIAGRAM

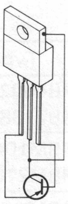
HDIE-100 (S)
HDIE-100 (N)

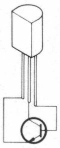
SECTION 7
SEMICONDUCTOR ELECTRODES

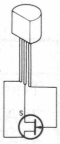
Type	Page
Transistor	
2SA733	7-2
2SB703A	7-2
2SC1674	7-2
2SD788	7-2
2SK523	7-2
Diode	
1S1587	7-2
BD703G	7-2
RD6.2EB	7-2
RD8.2EB	7-2
TLG124	7-2
TLR124	7-2
IC	
74F374PC	7-3
BX1306	7-3
BX1363	7-3
BX365A	7-3
BX366A	7-3
BX381	7-3
BX3931A	7-3
CA3080E	7-4
CX20116	7-4
CX20202	7-4
HD10101	7-5
HD10104	7-5
HD10105	7-5
HD10107	7-5
HD10110	7-5
HD10124	7-5
HD10125	7-5
HD10131	7-6
HD10136	7-6

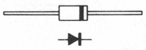
Type	Page
MB4002	7-6
MB7138H	7-6
MBM10474-15Z	7-7
MBM27C32A-30	7-7
MC10103L	7-7
MC10115L	7-7
MC10116L	7-5
MC10135L	7-7
MC10158L	7-7
MC10162L	7-8
MC10176L	7-8
MC10181L	7-8
MC74HC02N	7-9
MCM10149L	7-9
SN74265N	7-9
SN74LS00N	7-9
SN74LS123N	7-9
SN74LS148N	7-9
SN74LS153N	7-10
SN74LS157N	7-10
SN74LS174N	7-10
SN74LS221N	7-10
SN74LS244N	7-10
SN74LS30N	7-10
SN74LS378N	7-11
SN74LS74AN	7-11
SN74S163N	7-11
SN74S175N	7-11
TC4050BP	7-11
TC40H074P	7-12
TC40H163P	7-12
TL082CP	7-12
TL431CLPB	7-12
TL607CP	7-12
TL610CP	7-12


2SA733

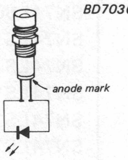

2SB703A

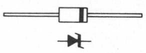

2SC1674
2SD788

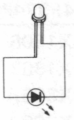

2SK523


1S1587

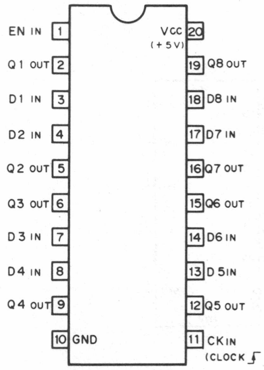
BD703G ; GREEN

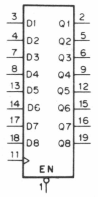



RD ? ?EB


TLG124 ; GREEN
TLR124 ; RED

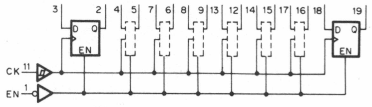
74F374PC (FSC)
TTL 3-STATE OUTPUTS OCTAL D-TYPE FLIP-FLOP
— TOP VIEW —



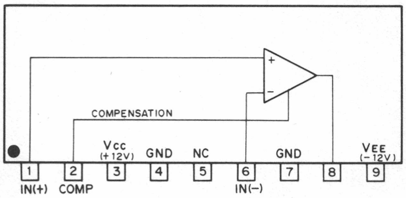


INPUTS			OUT
EN	D	CK	Q
0	1	⨍	1
0	0	⨍	0
0	X	0	Qo
1	X	X	HI-Z

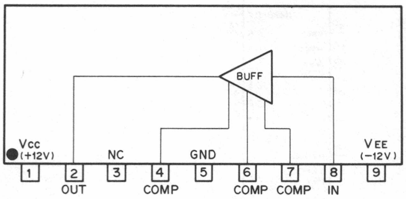
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE
HI-Z; HIGH IMPEDANCE



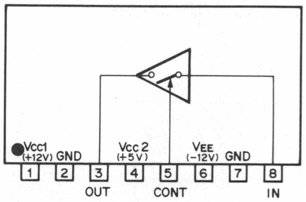
BX365A (SONY)
VIDEO AMPLIFIER
— SIDE VIEW —



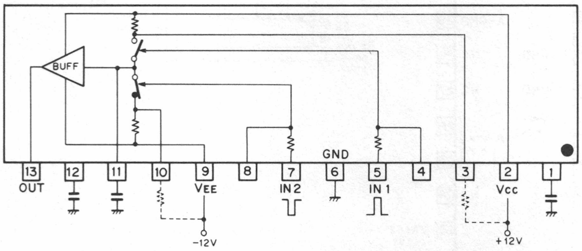
BX366A (SONY)
VIDEO BUFFER
— SIDE VIEW —

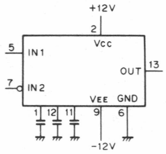


BX1306 (SONY)
VIDEO AND RF SWITCH
— SIDE VIEW —

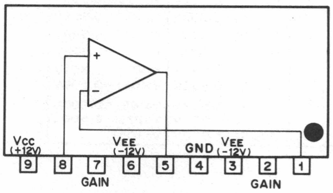


BX381 (SONY)
PHASE COMPARATOR
— SIDE VIEW —

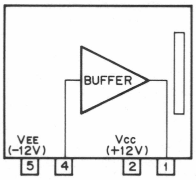




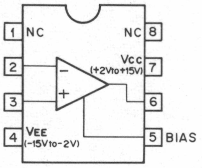
BX1363 (SONY)
HYBRID HD VIDEO WIDEBAND DIFFERENTIAL AMPLIFIER
— INPRINTED VIEW —



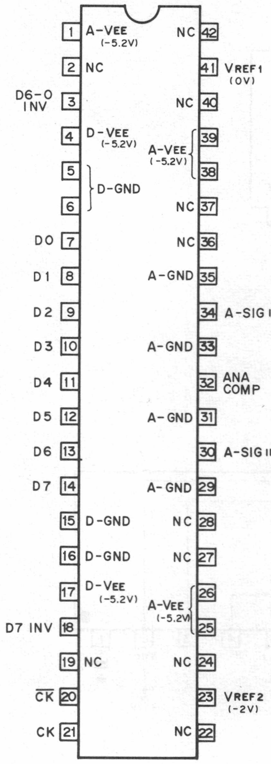
BX3931A (SONY)
HYBRID VIDEO WIDEBAND
BUFFER AMPLIFIER
— IMPRINTED SIDE — BX3931

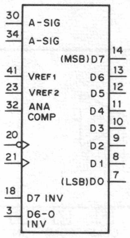


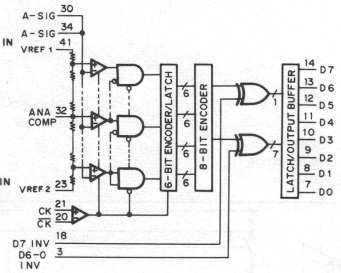
CA3080E (RCA)
OPERATIONAL AMPLIFIER
— TOP VIEW —



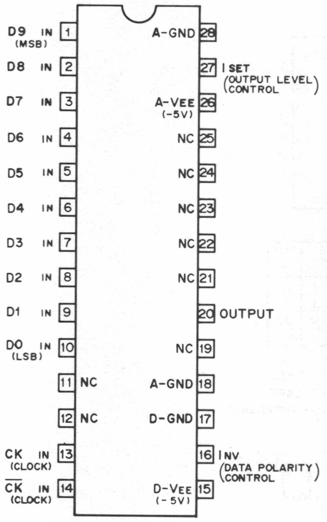
CX20116 (SONY)
8-BIT A/D CONVERTER
— TOP VIEW —

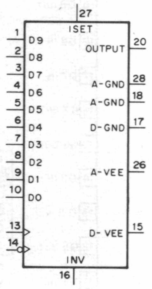


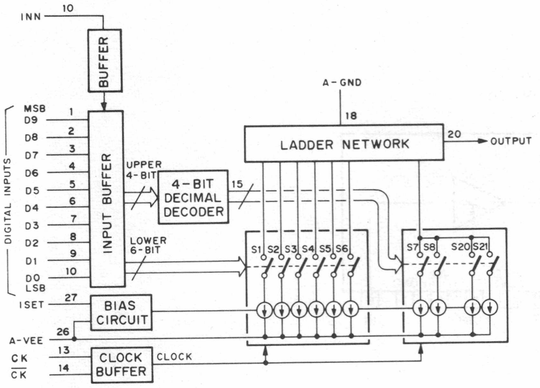




CX20202 (SONY)
10-BIT D/A CONVERTER (ECL INPUT)
— TOP VIEW —





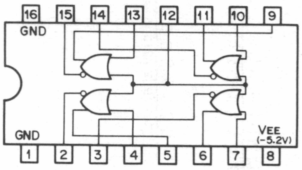


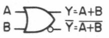
INV SELECTION

DATA INPUTS										OUTPUT	
D9	D8	D7	D6	D5	D4	D3	D2	D1	D0	INV "0"	INV "1"
1	1	1	1	1	1	1	1	1	1	Vo(OS)	Vo(OS)-1.000V
1	1	1	1	1	1	1	1	1	0	Vo(OS)-0.001V	Vo(OS)-0.999V
1	1	1	1	1	1	1	1	0	1	Vo(OS)-0.002V	Vo(OS)-0.998V
1	1	1	1	1	1	1	1	0	1	Vo(OS)-0.002V	Vo(OS)-0.998V
1	1	1	1	1	1	1	1	0	1	Vo(OS)-0.002V	Vo(OS)-0.998V
1	0	0	0	0	0	0	0	0	0	Vo(OS)-0.500V	Vo(OS)-0.502V
0	1	1	1	1	1	1	1	1	1	Vo(OS)-0.501V	Vo(OS)-0.501V
0	1	1	1	1	1	1	1	1	0	Vo(OS)-0.502V	Vo(OS)-0.500V
0	1	1	1	1	1	1	1	1	0	Vo(OS)-0.502V	Vo(OS)-0.500V
0	1	1	1	1	1	1	1	1	1	Vo(OS)-0.502V	Vo(OS)-0.500V
0	0	0	0	0	0	0	0	0	0	Vo(OS)-1.000V	Vo(OS)

1 ; ECL HIGH LEVEL
0 ; ECL LOW LEVEL
Vo(OS), ZERO OFFSET

HD10101 (HITACHI)
MC10101L (MOTOROLA)
ECL 2-INPUT OR/NOR GATE
— TOP VIEW —

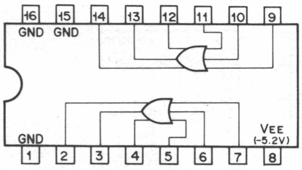




A	B	Y	$\overline{Y}$
0	0	0	1
0	1	1	0
1	0	1	0
1	1	1	0

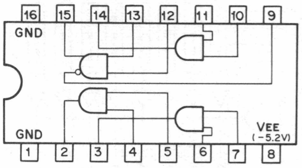
0; LOW LEVEL
1; HIGH LEVEL

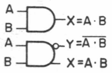
HD10110 (HITACHI)
MC10110L (MOTOROLA)
ECL 3-INPUT 3-OUTPUT OR GATE
— TOP VIEW —



Y1=Y2=Y3
=A+B+C

HD10104 (HITACHI)
MC10104L (MOTOROLA)
ECL 2-INPUT AND GATE
— TOP VIEW —

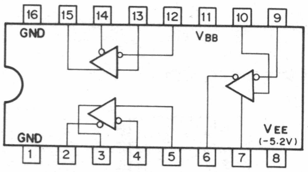




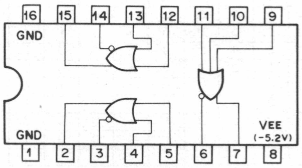
A	B	X	Y
0	0	0	1
0	1	0	1
1	0	0	1
1	1	1	0

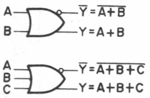
0 ; LOW LEVEL
1 ; HIGH LEVEL

HD10116 (HITACHI)
MC10116L (MOTOROLA)
ECL DIFFERENTIAL OR/NOR LINE RECEIVER
— TOP VIEW —

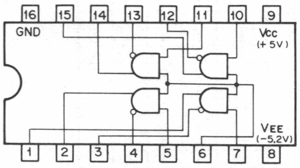


HD10105 (HITACHI)
MC10105L (MOTOROLA)
ECL 2-3-2-INPUT OR/NOR GATE
— TOP VIEW —

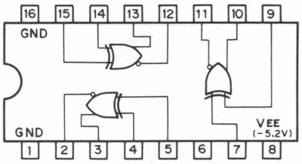


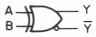


HD10124 (HITACHI)
MC10124L (MOTOROLA)
ECL TTL-TO-ECL TRANSLATOR
— TOP VIEW —



HD10107 (HITACHI)
MC10107L (MOTOROLA)
ECL EXCLUSIVE OR/NOR GATE
— TOP VIEW —

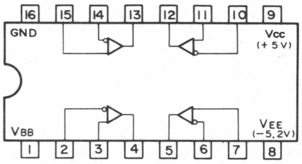




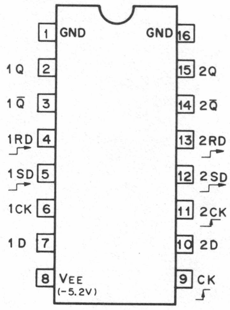
A	B	Y	$\overline{Y}$
0	0	0	1
0	1	1	0
1	0	1	0
1	1	0	1

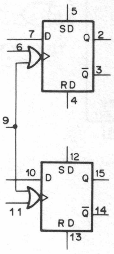
0; LOW LEVEL
1; HIGH LEVEL

HD10125 (HITACHI)
MC10125L (MOTOROLA)
ECL ECL-TO-TTL TRANSLATOR
— TOP VIEW —



HD10131 (HITACHI)
MC10131L (MOTOROLA)
ECL D-TYPE FLIP FLOP
— TOP VIEW —

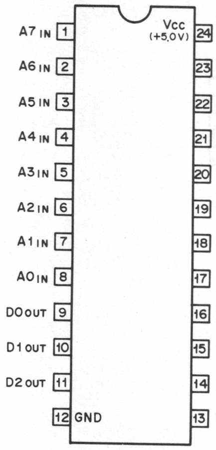


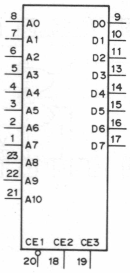


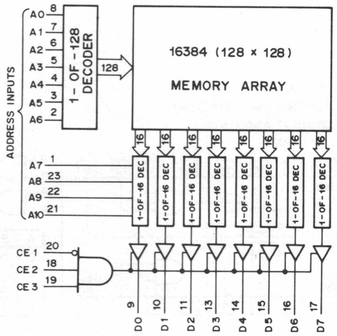
INPUTS				OUTPUTS	
S_D	R_D	CK	D	Q_{n+1}	$\overline{Q_{n+1}}$
1	0	X	X	1	0
0	1	X	X	0	1
1	1	X	X	ND	ND
0	0	↑	1	1	0
0	0	↑	0	0	1
0	0	0	X	Q_n	$\overline{Q_n}$

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE
ND; NOT DEFINED

MB7138-H (FUJITSU) (ACCESS TIME = 45 nS)
16384-BIT (2048x8) PROM WITH 3-STATE OUTPUTS
— TOP VIEW —



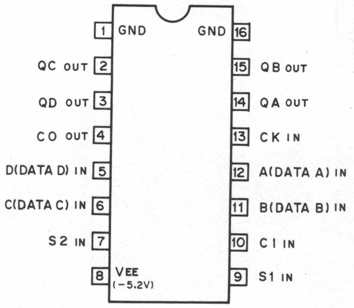


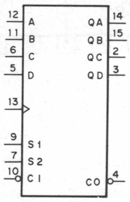


CHIP SEL			OUTPUT
CE1	CE2	CE3	
0	1	1	ENABLE
1	0	X	HI-IMPEDANCE
1	X	0	

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

HD10136 (HITACHI)
MC10136L (MOTOROLA)
ECL PROGRAMMABLE SYNCHRONOUS 4-BIT BINARY UP/DOWN COUNTER
— TOP VIEW —





MODE SELECTION

INPUTS			MODE
S1	S2	CI	
0	0	X	PRESET (LOAD)
0	1	0	COUNT UP
1	0	0	COUNT DOWN
1	1	X	COUNT HOLD
X	X	1	COUNT DISABLE

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

COUNT SEQUENCE

COUNT	OUTPUTS			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

CO GOES LOW WHEN COUNT GOES "15" AT UP-COUNT OR WHEN COUNT GOES "0" AT DOWN COUNT OR WHEN THE COUNTER IS BEING PRESET.
CI INPUT ALLOWS SEVERAL DEVICES TO BE CASCADED IN A FULLY SYNCHRONOUS MULTISTAGE COUNTER.

WORD/ADDRESS TABLE

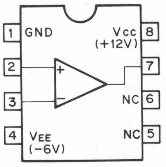
WORD	ADDRESS INPUT										
	A10	A9	A8	A7	A6	A5	A4	A3	A2	A1	A0
0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	1
2	0	0	0	0	0	0	0	0	0	1	0
¦	¦	¦	¦	¦	¦	¦	¦	¦	¦	¦	¦
2045	1	1	1	1	1	1	1	1	1	0	1
2046	1	1	1	1	1	1	1	1	1	1	0
2047	1	1	1	1	1	1	1	1	1	1	1

DATA CODE / ACTUAL DATA

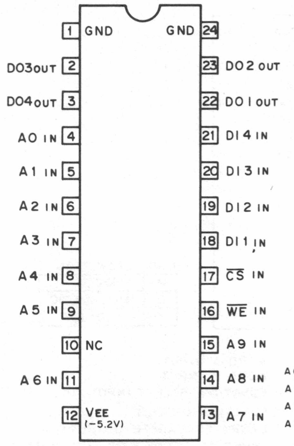
DATA CODE		ACTUAL DATA							
		D7	D6	D5	D4	D3	D2	D1	D0
0	00	0	0	0	0	0	0	0	0
1	01	0	0	0	0	0	0	0	1
2	02	0	0	0	0	0	0	1	0
¦	¦	¦	¦	¦	¦	¦	¦	¦	¦
8	08	0	0	0	0	1	0	0	0
9	09	0	0	0	0	1	0	0	1
10	0A	0	0	0	0	1	0	1	0
11	0B	0	0	0	0	1	0	1	1
12	0C	0	0	0	0	1	1	0	0
13	0D	0	0	0	0	1	1	0	1
14	0E	0	0	0	0	1	1	1	0
15	0F	0	0	0	0	1	1	1	1
16	10	0	0	0	1	0	0	0	0
17	11	0	0	0	1	0	0	0	1
¦	¦	¦	¦	¦	¦	¦	¦	¦	¦
238	EE	1	1	1	0	1	1	1	0
239	EF	1	1	1	0	1	1	1	1
240	F0	1	1	1	1	0	0	0	0
241	F1	1	1	1	1	0	0	0	1
242	F2	1	1	1	1	0	0	1	0
¦	¦	¦	¦	¦	¦	¦	¦	¦	¦
248	F8	1	1	1	1	1	0	0	0
249	F9	1	1	1	1	1	0	0	1
250	FA	1	1	1	1	1	0	1	0
251	FB	1	1	1	1	1	0	1	1
252	FC	1	1	1	1	1	1	0	0
253	FD	1	1	1	1	1	1	0	1
254	FE	1	1	1	1	1	1	1	0
255	FF	1	1	1	1	1	1	1	1

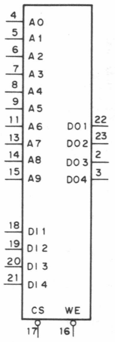
IN DECIMAL (first column); IN HEXADECIMAL (second column)

MB4002 (FUJITSU)
HIGH SPEED VOLTAGE COMPARATOR
— TOP VIEW —



MBM10474A-15 (FUJITSU)
4096-BIT (1024x4) BIPOLAR RAM
— TOP VIEW —

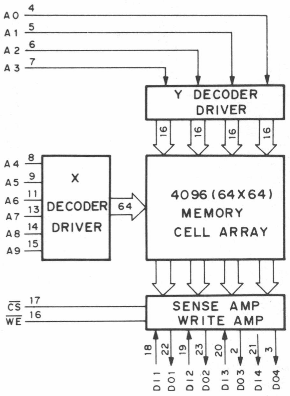




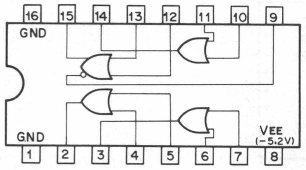
INPUTS		MODE
CS	WE	
0	0	WRITE
0	1	READ
1	X	INHIBIT

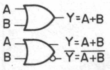
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

A0～A9 ; ADDRESS INPUTS
DI1～DI4 ; DATA INPUTS
DO1～DO4 ; DATA OUTPUTS
CS ; CHIP SELECT
WE ; WRITE ENABLE



MC10103L (MOTOROLA)
ECL 2-INPUT OR GATE
— TOP VIEW —

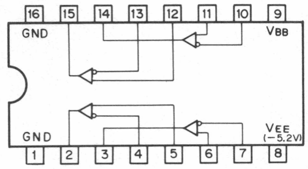




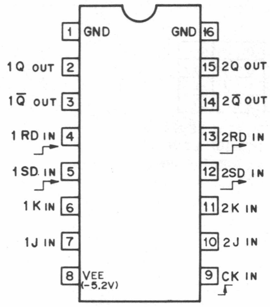
A	B	Y	$\overline{Y}$
0	0	0	1
0	1	1	0
1	0	1	0
1	1	1	0

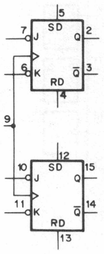
0; LOW LEVEL
1; HIGH LEVEL

MC10115L (MOTOROLA)
ECL LINE RECEIVER
— TOP VIEW —



MC10135L (MOTOROLA)
ECL J-K FLIP-FLOP
— TOP VIEW —

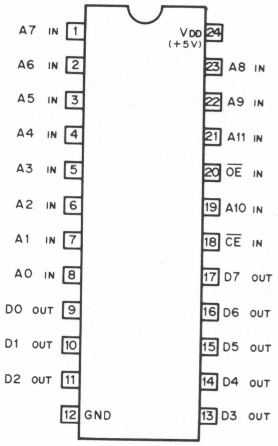


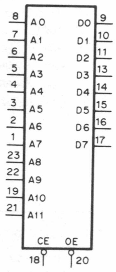


INPUTS					OUTPUTS	
SD	RD	J	K	CK	Q_{n+1}	$\overline{Q_{n+1}}$
1	0	X	X	X	1	0
0	1	X	X	X	0	1
1	1	X	X	X	ND	ND
0	0	0	0	⨍	$\overline{Q_n}$	Q_n
0	0	1	0	⨍	0	1
0	0	0	1	⨍	1	0
0	0	1	1	⨍	Q_n	$\overline{Q_n}$

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
ND ; NOT DEFINED

MBM27C32A-30 (FUJITSU) (ACCESS TIME = 300 nS)
C-MOS 32K (4Kx8) UV EPROM
— TOP VIEW —

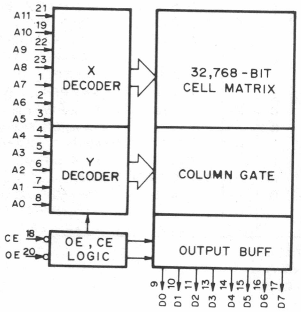




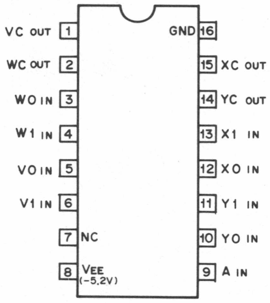
IN		OUT	FUNCTION
CE	OE	Dn	
0	0	DENTERED	READ
1	X	HIGH Z	STANDBY

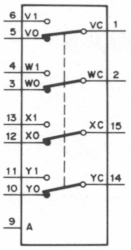
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE
HIGH Z; HIGH IMPEDANCE

A0-A11 ; ADDRESS
CE ; CHIP ENABLE
OE ; OUTPUT ENABLE
D0-D7 ; DATA OUTPUTS



MC10158L (MOTOROLA)
ECL 2-INPUT MULTIPLEXER
— TOP VIEW —





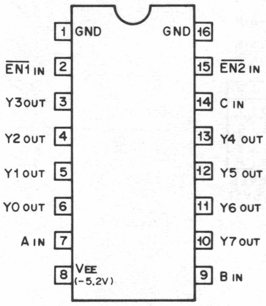
A(CONT)	ON CHANNEL
0	V0,W0,X0,Y0
1	V1,W1,X1,Y1

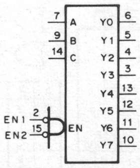
0 ; LOW LEVEL
1 ; HIGH LEVEL

MC10162L (MOTOROLA)

ECL 3-TO-8-LINE DECODER/DEMULTIPLEXER

— TOP VIEW —





INPUTS				OUTPUTS							
EN	C	B	A	Y7	Y6	Y5	Y4	Y3	Y2	Y1	Y0
1	X	X	X	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	1
0	0	0	1	0	0	0	0	0	0	1	0
0	0	1	0	0	0	0	0	0	1	0	0
0	0	1	1	0	0	0	0	1	0	0	0
0	1	0	0	0	0	0	1	0	0	0	0
0	1	0	1	0	0	1	0	0	0	0	0
0	1	1	0	0	1	0	0	0	0	0	0
0	1	1	1	1	0	0	0	0	0	0	0

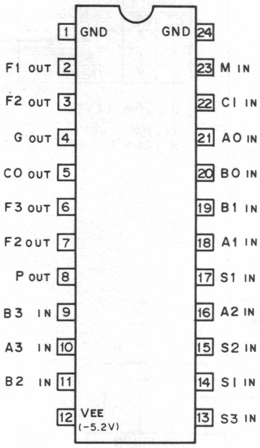
$EN = \overline{EN1} \cdot \overline{EN2}$

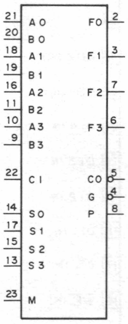
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

MC10181L (MOTOROLA)

ECL 4-BIT ARITHMETIC LOGIC UNIT/FUNCTION GENERATOR

— TOP VIEW —

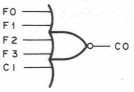




MODE SELECTION

M	MODE
0	ARITHMETIC
1	LOGIC

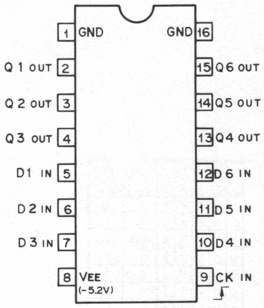
A ; WORD A INPUT
B ; WORD B INPUT
S ; FUNCTION-SELECT INPUT
F ; FUNCTION OUTPUT
P ; CARRY PROPAGATE OUTPUT
G ; INVERTED CARRY GENERATE OUTPUT
M ; MODE-SELECT INPUT
C I ; CARRY INPUT FOR ADDITION
C O ; CARRY OUTPUT

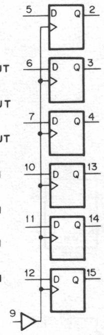


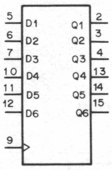
MC10176L (MOTOROLA)

ECL HEX D-TYPE FLIP-FLOP

— TOP VIEW —







D	CK	Q_{n+1}
0	∫	0
1	∫	1
X	0	Q_n

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

FUNCTION SELECTION

1.POSITIVE LOGIC

SELECTION				OPERATION	
$\overline{S3}$	$\overline{S2}$	$\overline{S1}$	$\overline{S0}$	LOGIC"F"	ARITHMETIC"F"
0	0	0	0	$F=\overline{A}$	F=A PLUS 1
0	0	0	1	$F=\overline{A}+\overline{B}$	$F=A$ PLUS$(A \cdot \overline{B})$
0	0	1	0	$F=\overline{A}+B$	$F=A$ PLUS$(A \cdot B)$
0	0	0	1	F=LOGICAL"1"	F=A TIMES 2
0	1	0	0	$F=\overline{A} \cdot \overline{B}$	F=(A+B)PLUS 0
0	1	0	1	$F=\overline{B}$	$F=(A+B)$PLUS$(A \cdot \overline{B})$
0	1	1	0	$F=A \odot B$	F=A PLUS B
0	1	1	1	$F=A+\overline{B}$	F=A PLUS(A+B)
1	0	0	0	$F=\overline{A} \cdot B$	$F=(A+\overline{B})$PLUS 0
1	0	0	1	$F=A \oplus B$	F=A MINUS B MINUS1
1	0	1	0	F=B	$F=(A+\overline{B})$PLUS$(A \cdot B)$
1	0	1	1	F=A+B	$F=A$ PLUS$(A+\overline{B})$
1	1	0	0	F=LOGICAL"0"	F=MINUS1(TWO'S COMPLEMELT)
1	1	0	1	$F=A \cdot \overline{B}$	$F=(A \cdot \overline{B})$MINUS 1
1	1	1	0	$F=A \cdot B$	$F=(A \cdot B)$MINUS 1
1	1	1	1	F=A	F=A MINUS 1

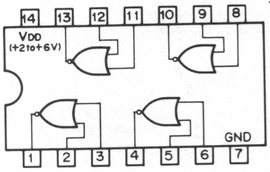
0 ; LOW LEVEL
1 ; HIGH LEVEL
CI=LOW LEVEL

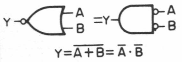
2.NEGATIVE LOGIC

SELECTION				OPERATION	
S3	S2	S1	S0	LOGIC"F"	ARITHMETIC "F"
0	0	0	0	$F=\overline{A}$	F=A MINUS 1
0	0	0	1	$F=\overline{A}+\overline{B}$	$F=A$ PLUS$(A+\overline{B})$
0	0	1	0	$F=\overline{A} \cdot B$	F=A PLUS(A+B)
0	0	1	1	F=LOGICAL"0"	F=A TIMES 2
0	1	0	0	$F=\overline{A} \cdot \overline{B}$	$F=(A \cdot B)$ MINUS 1
0	1	0	1	$F=\overline{B}$	$F=(A \cdot B)$PLUS$(A+\overline{B})$
0	1	1	0	$F=A \oplus B$	F=A PLUS B
0	1	1	1	$F=A \cdot \overline{B}$	$F=A$ PLUS$(A \cdot B)$
1	0	0	0	$F=\overline{A}+B$	$F=(A \cdot \overline{B})$MINUS 0
1	0	0	1	$F=A \cdot B$	F=A MINUS B MINUS1
1	0	1	0	F=B	$F=(A \cdot \overline{B})$PLUS$(A+B)$
1	0	1	1	$F=A \cdot B$	$F=(A \cdot \overline{B})$PLUS A
1	1	0	0	F=LOGICAL"1"	F=MINUS1(TWO'S COMPLEMENT)
1	1	0	1	$F=A+\overline{B}$	$F=(A+\overline{B})$PLUS 0
1	1	1	0	F=A+B	F=(A+B)PLUS 0
1	1	1	1	F=A	F=A PLUS 0

0 ; LOW LEVEL
1 ; HIGH LEVEL
CI=HIGH LEVEL

MC74HC02N (MOTOROLA)
TC74HC02P (TOSHIBA)
C MOS 2-INPUT POSITIVE-NOR GATE
— TOP VIEW —



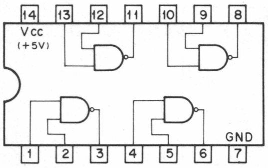


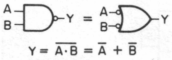
$Y = \overline{A + B} = \bar{A} \cdot \bar{B}$

A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

SN74LS00N (TI)
TTL 2-INPUT POSITIVE-NAND GATE
— TOP VIEW —



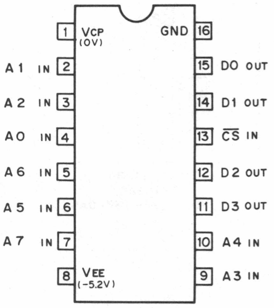


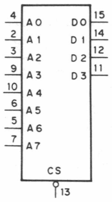
$Y = \overline{A \cdot B} = \bar{A} + \bar{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

MCM10149L (MOTOROLA)
ECL 1024-BIT (256x4) PROM
— TOP VIEW —

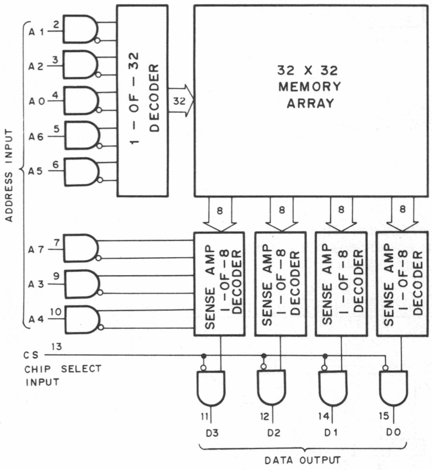




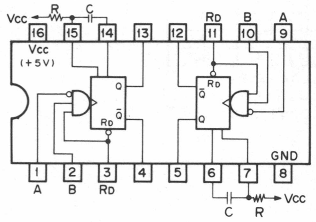
OUTPUT MODE

CS	OUTPUT
0	HI-IMPEADANCE
1	ENABLE

0 ; ECL LOW LEVEL
1 ; ECL HIGH LEVEL



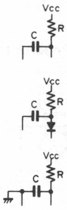
SN74LS123N (TI)
TTL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR WITH DIRECT RESET
— TOP VIEW —



INPUTS			OUTPUTS	
RD	A	B	Q	$\bar{Q}$
0	X	X	0	1
X	1	X	0	1
X	X	0	0	1
1	0	↑	⊓	⊔
1	↓	1	⊓	⊔
↑	0	1	⊓	⊔

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

OUTPUT PULSE WIDTH



'123 ; $T_W = 0.28 \left(1 + \frac{700}{R}\right) CR$

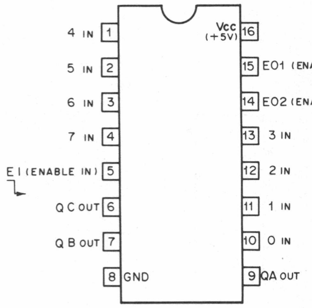
'L123 ; $T_W = 0.33 \left(1 + \frac{700}{R}\right) CR$

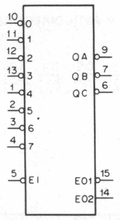
'123 ; $T_W = 0.25 \left(1 + \frac{700}{R}\right) CR$

'L123 ; $T_W = 0.29 \left(1 + \frac{700}{R}\right) CR$

'LS123 ; $T_W = 0.45 CR$

SN74LS148N (TI)
TTL 8-TO-3-LINE PRIORITY ENCODER
— TOP VIEW —

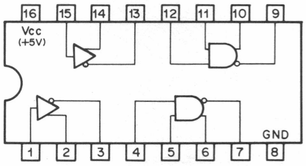


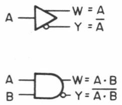


INPUTS									OUTPUTS				
EI	7	6	5	4	3	2	1	0	QC	QB	QA	EO1	EO2
1	X	X	X	X	X	X	X	X	1	1	1	1	1
0	1	1	1	1	1	1	1	1	1	1	1	0	1
0	1	1	1	1	1	1	1	0	1	1	1	1	0
0	1	1	1	1	1	1	0	X	1	1	0	1	0
0	1	1	1	1	1	0	X	X	1	0	1	1	0
0	1	1	1	1	0	X	X	X	1	0	0	1	0
0	1	1	1	0	X	X	X	X	0	1	1	1	0
0	1	1	0	X	X	X	X	X	0	1	0	1	0
0	1	0	X	X	X	X	X	X	0	0	1	1	0
0	0	X	X	X	X	X	X	X	0	0	0	1	0

0 ; LOW LEVEL 1 ; HIGH LEVEL X ; DON'T CARE

SN74265N (TI)
TTL COMPLEMENTARY-OUTPUT ELEMENT
— TOP VIEW —

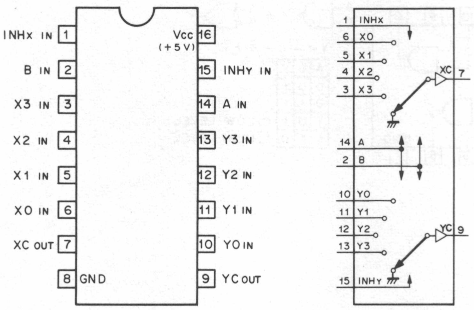




SN74LS153N (TI)

TTL 4-LINE-TO-1-LINE DATA SELECTOR/MULTIPLEXER

— TOP VIEW —



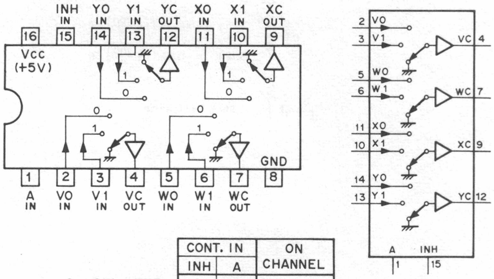
CONTROL IN			ON CHANNEL
INH	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	X	X	GND

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

SN74LS157N (TI)

TTL 2-LINE-TO-1-LINE DATA SELECTOR/MULTIPLEXER

— TOP VIEW —



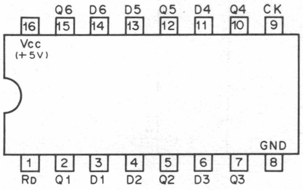
CONT. IN		ON CHANNEL
INH	A	
0	0	0
0	1	1
1	X	GND

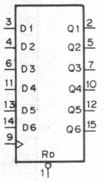
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

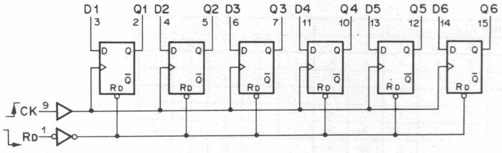
SN74LS174N (TI)

TTL D-TYPE FLIP-FLOP WITH DIRECT RESET

— TOP VIEW —







EACH FLIP-FLOP

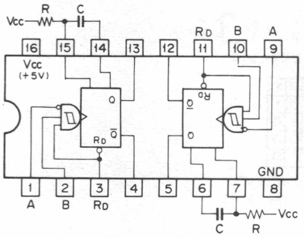
INPUTS			OUT
RD	CK	D	Q
0	X	X	0
1	↑	0	0
1	↑	1	1
1	0	X	Qo

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

SN74LS221N (TI)

TTL MONOSTABLE MULTIVIBRATOR WITH SCHMITT TRIGGER INPUT

— TOP VIEW —



INPUTS			OUTPUTS	
RD	A	B	Q	$\bar{Q}$
0	X	X	0	1
X	1	X	0	1
X	X	0	0	1
1	0	↑	⎍	⎍ (inverted)
1	↓	1	⎍	⎍ (inverted)
↑	0	1	⎍	⎍ (inverted)

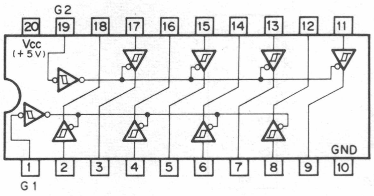
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

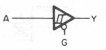
OUTPUT PULSE WIDTH = 0.7CR

SN74LS244N (TI)

TTL 3-STATE SCHMITT TRIGGER BUFFER/DRIVER

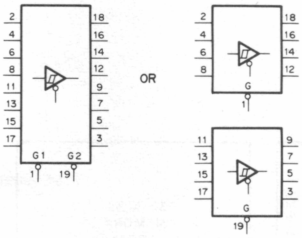
— TOP VIEW —





G	A	Y
0	0	0
0	1	1
1	X	HI-Z

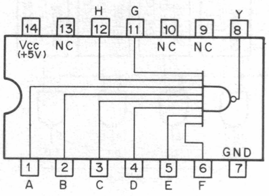
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE

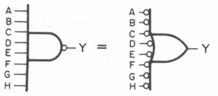


SN74LS30N (TI)

TTL 8-INPUT POSITIVE-NAND GATE

— TOP VIEW —



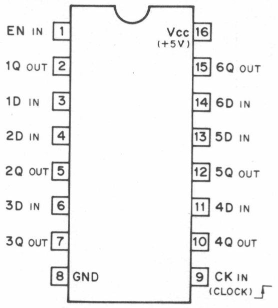


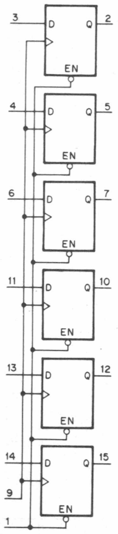
$Y = \overline{A \cdot B \cdot C \cdot D \cdot E \cdot F \cdot G \cdot H}$
$= \bar{A} + \bar{B} + \bar{C} + \cdots + \bar{H}$

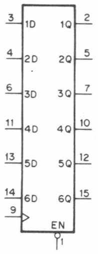
SN74LS378N (TI)

TTL D-TYPE FLIP-FLOP WITH ENABLE

— TOP VIEW —







EACH FLIP-FLOP

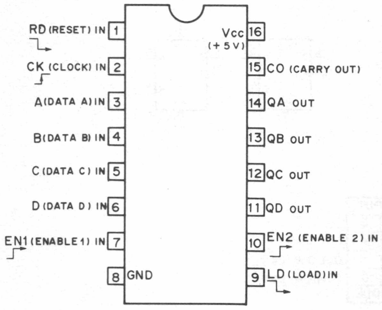
INPUTS			OUT
EN	CK	D	Q
1	X	X	Qo
0	↑	1	1
0	↑	0	0
X	0	X	Qo

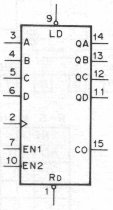
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

SN74S163N (TI)

TTL PRESETTABLE SYNCHRONOUS 4-BIT BINARY COUNTER

— TOP VIEW —





MODE SELECTION

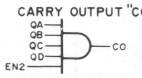
CONTROL INPUTS				MODE
RD	LD	EN1	EN2	
0	X	X	X	RESET (SYNCHRONOUS)
1	0	X	X	PRESET (SYNCHRONOUS)
1	1	0	X	NO COUNT
1	1	X	0	NO COUNT
1	1	1	1	COUNT

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

COUNT SEQUENCE

COUNT	OUTPUTS			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

CARRY OUTPUT "CO"

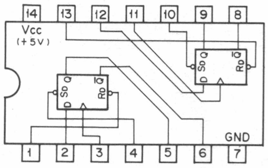


CO IS HIGH WHEN EN2 INPUT IS HIGH AND COUNT IS "15".

SN74LS74AN (TI)

TTL D-TYPE FLIP FLOP WITH DIRECT SET/RESET

— TOP VIEW —



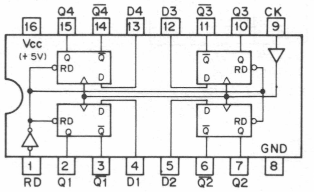
INPUTS				OUTPUTS	
SD	RD	CK	D	Qn+1	$\overline{Q}$n+1
0	1	X	X	1	0
1	0	X	X	0	1
0	0	X	X	1*	1*
1	1	↑	1	1	0
1	1	↑	0	0	1
1	1	0	X	Qn	$\overline{Q}$n

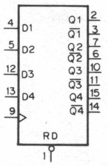
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE
1*; NONSTABLE

SN74S175N (TI)

TTL D-TYPE FLIP-FLOP WITH CLEAR

— TOP VIEW —





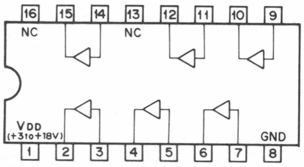
RD	CK	D	Q	$\overline{Q}$
0	X	X	0	1
1	↑	1	1	0
1	↑	0	0	1
1	0	X	Qo	$\overline{Q}$o

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

TC4050BP (TOSHIBA)

C-MOS NON-INVERTING TYPE BUFFER/CONVERTER

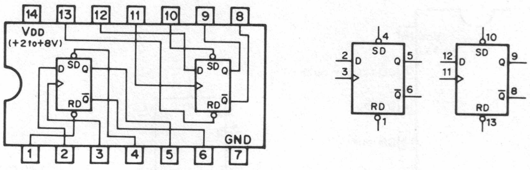
— TOP VIEW —



Y = A

A	Y
0	0
1	1

TC40H074P (TOSHIBA)
C-MOS HIGH SPEED D-TYPE FLIP-FLOP WITH DIRECT SET/RESET
— TOP VIEW —



D- MODE

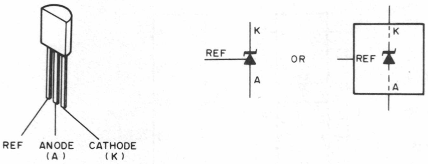
tn	tn + 1	
D	Q	Q̄
0	0	1
1	1	0

R-S MODE

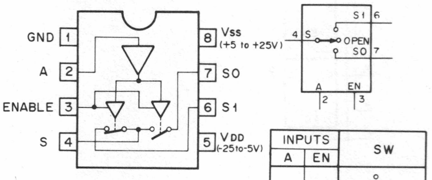
INPUT		OUTPUT	
RD	SD	Q	Q̄
0	0	1	1
0	1	0	1
1	0	1	0
1	1	D-MODE	

0; LOW LEVEL
1; HIGH LEVEL

TL431CLPB (TI)
ADJUSTABLE PRECISION SHUNT REGULATOR



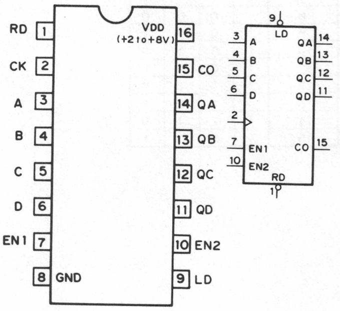
TL607CP (TI)
TL607CPS (TI) FLAT PACKAGE
P-MOS ANALOG SWITCH
— TOP VIEW —



INPUTS		SW
A	EN	
X	0	OPEN
0	1	6 7
1	1	6 7

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

TC40H163P (TOSHIBA)
C-MOS PRESETTABLE SYNCHRONOUS 4-BIT BINARY COUNTER
— TOP VIEW —



MODE SELECTION

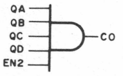
CONT. INPUTS				MODE
RD	LD	EN1	EN2	
0	X	X	X	RESET (SYNCHRONOUS)
1	0	X	X	PRESET (SYNCHRONOUS)
1	1	0	X	NO COUNT
1	1	X	0	NO COUNT
1	1	1	1	COUNT

COUNT SEQUENCE

COUNT	OUTPUTS			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
⋮	⋮	⋮	⋮	⋮
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

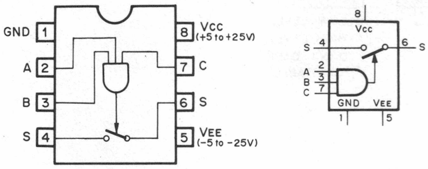
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

CARRY OUTPUT "CO"



CO GOES HIGH WHEN EN2 IS HIGH AND COUNT IS "15."

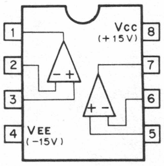
TL610CP (TI)
MOS ANALOG SWITCH
— TOP VIEW —



CONT IN			S
A	B	C	
0	X	X	OFF(OPEN)
X	0	X	OFF(OPEN)
X	X	0	OFF(OPEN)
1	1	1	ON(CLOSED)

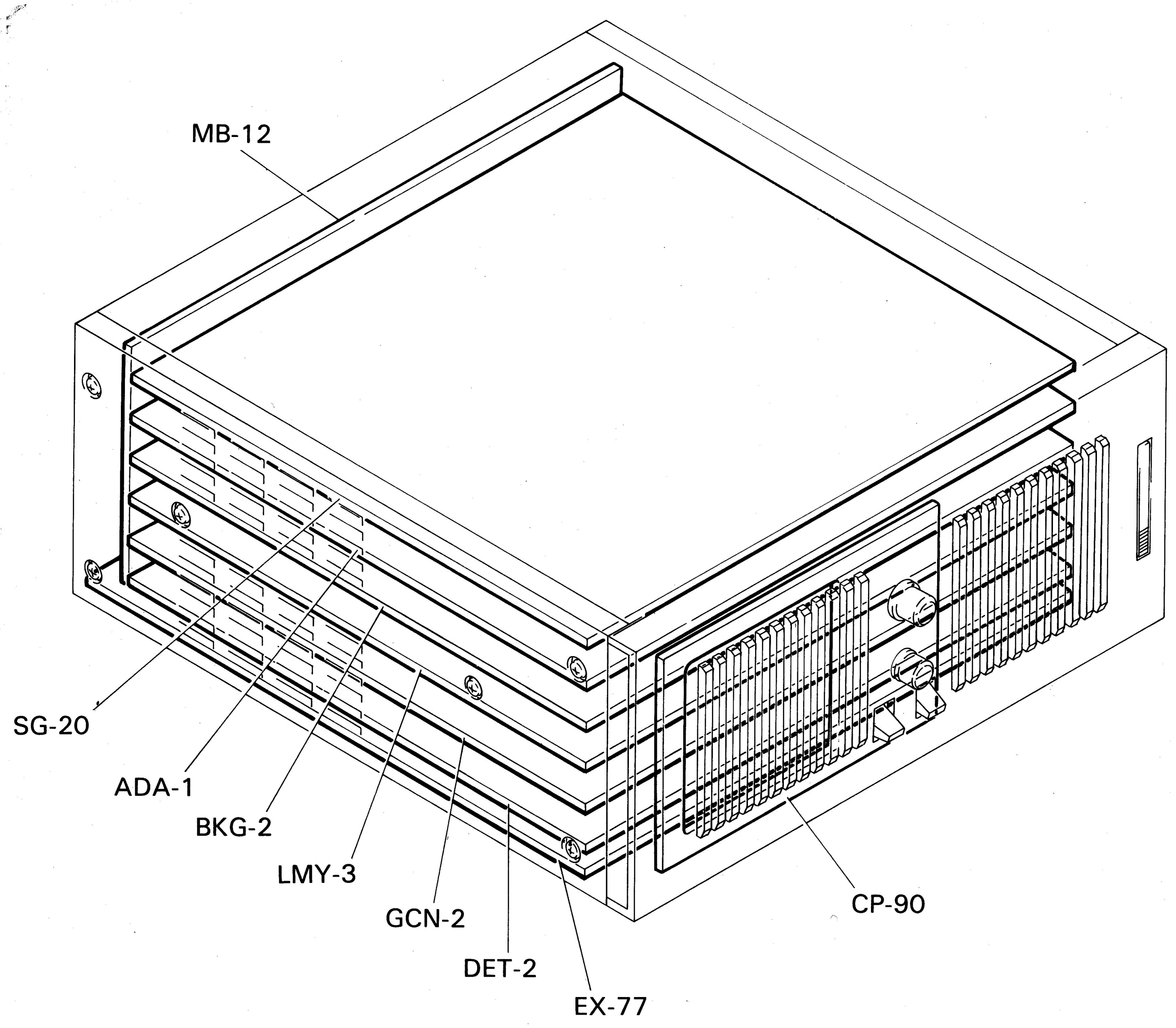
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

TL082CP (TI)
OPERATIONAL AMPLIFIER
(J FET-INPUT)
— TOP VIEW —

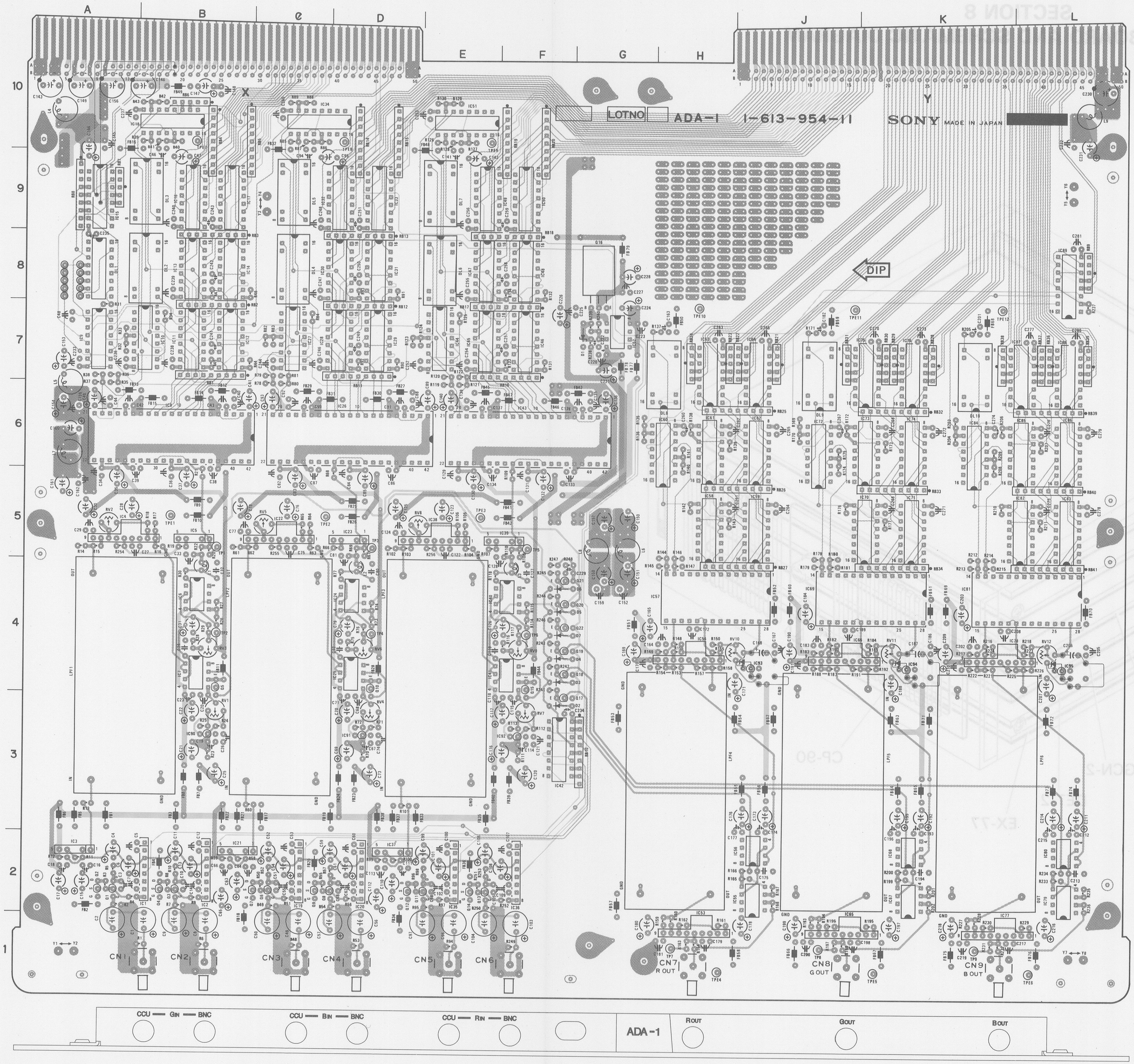


SECTION 8
MOUNTED BOARD AND SCHEMATIC DIAGRAM

BOARD LAYOUT



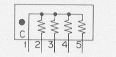
ADA-1 BOARD



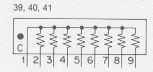
CN1	1B
CN2	1B
CN3	1C
CN4	1D
CN5	1E
CN6	1F
CN7	1H
CN8	1J
CN9	1K
D1	7G
D2	3F
D3	4F
D4	4F
D5	4F
D6	4F
D7	4F
DL1	8A
DL2	8B
DL3	9B
DL4	8C
DL5	9C
DL6	8E
DL7	9E
DL8	7H
DL9	7J
DL10	7K
IC1	2B
IC2	2B
IC3	2A
IC4	5A
IC5	5B
IC6	4B
IC7	4B
IC8	6B
IC9	7A
IC10	7B
IC11	7B
IC12	7B
IC13	8B
IC14	8B
IC15	9A
IC16	9B
IC17	9B
IC18	10B
IC19	2C
IC20	2D
IC21	2B
IC22	5C
IC23	5D
IC24	4D
IC25	4D
IC26	6D
IC27	7C
IC28	7D
IC29	7D
IC30	8D
IC31	8D
IC32	9D
IC33	9D
IC34	10C
IC35	2E
IC36	2F
IC37	2D
IC38	5E
IC39	5F
IC40	4F
IC41	4F
IC42	3F
IC43	6F
IC44	7E
IC45	7E
IC46	7F
IC47	8E
IC48	8F
IC49	9E
IC50	9F
IC51	10E
IC52	7G
IC53	1H
IC54	4H
IC55	2J
IC56	2J
IC57	4H
IC58	5H
IC59	5J
IC60	6H
IC61	6H
IC62	6J
IC63	7H
IC64	7J
IC65	1J
IC66	4J
IC67	2K
IC68	2K
IC69	4K
IC70	5K
IC71	5K
IC72	6J
IC73	6K
IC74	6K
IC75	7K
IC76	7K
IC77	1K
IC78	4K

IC79	2L
IC80	2L
IC81	4L
IC82	5L
IC83	5L
IC84	6K
IC85	6L
IC86	6L
IC87	7L
IC88	7L
IC89	8L
IC90	3B
IC91	3D
IC92	3F
IC93	4J
IC94	4K
IC95	4L
LPF1	4A
LPF2	4C
LPF3	4E
LPF4	3H
LPF5	3J
LPF6	3K
Q1	2A
Q2	2A
Q3	2B
Q4	2B
Q5	4B
Q6	2C
Q7	2C
Q8	2D
Q9	2C
Q10	4D
Q11	2E
Q12	2D
Q13	2E
Q14	2E
Q15	4F
Q16	7G
Q17	3F
Q18	4F
Q19	4F
Q20	4F
Q21	4F
Q22	4F
RV1	3B
RV2	5A
RV3	4B
RV4	3D
RV5	5C
RV6	4D
RV7	3F
RV8	5D
RV9	4F
RV10	4J
RV11	4K
RV12	4L
TP1	5B
TP2	4B
TP3	5D
TP4	4D
TP5	5F
TP6	4F
TP7	1H
TP8	1J
TP9	1K
TPE1	5B
TPE2	5C
TPE3	5E
TPE4	1H
TPE5	1K
TPE6	1L
TPE7	10B
TPE8	10D
TPE9	10E
TPE10	7H
TPE11	7J
TPE12	7K

RB6, 7, 9, 21~24, 28~31, 35~38



RB1~5, 8, 10~20, 25, 26, 27, 32, 33, 34, 39, 40, 41

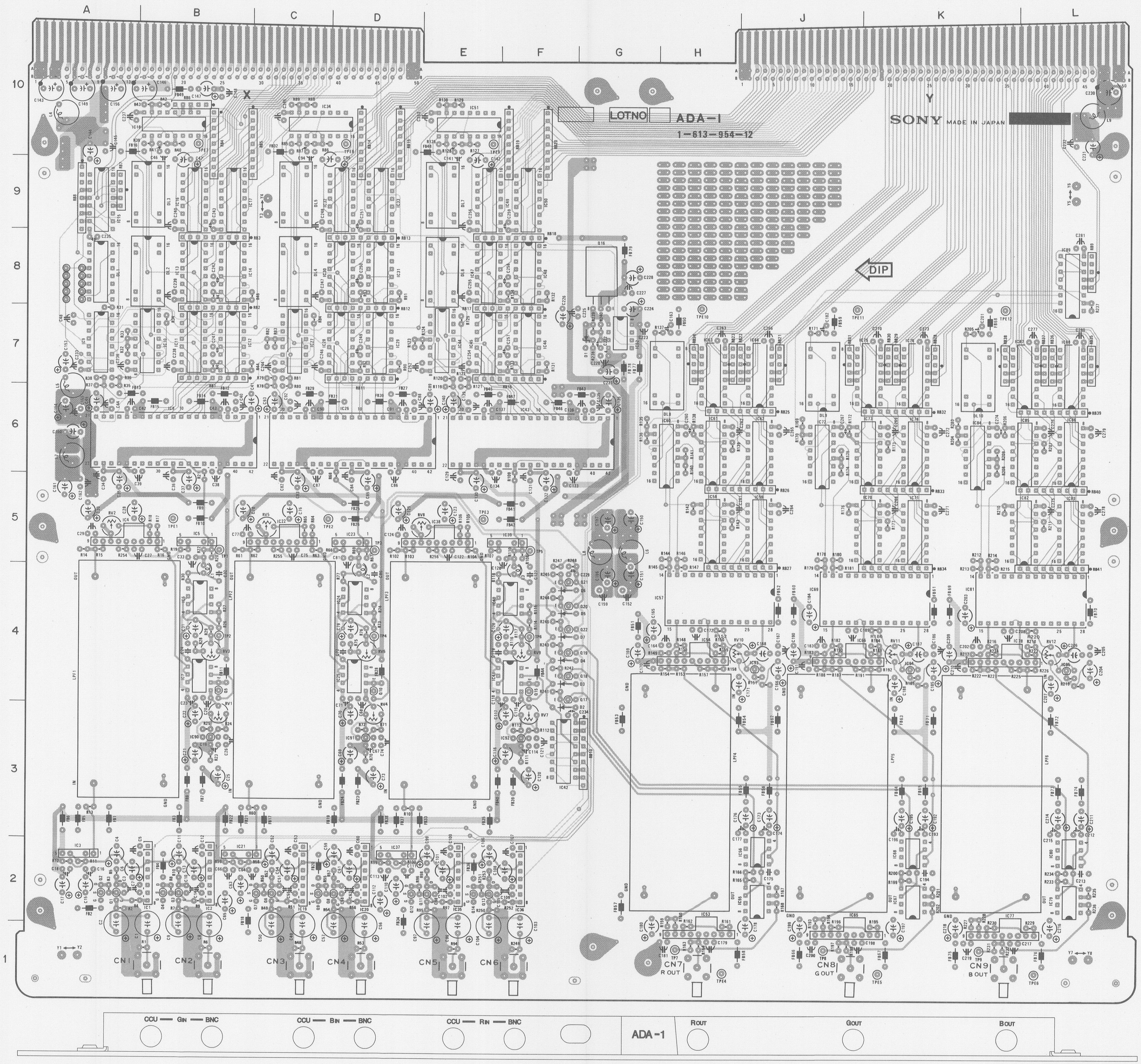


ADA-1 -COMPONENT SIDE-
1-613-954-11
HDIE-100(S)10101~10115
HDIE-100(N)10101~10115

ADA-1 BOARD; A/D & D/A CONVERTER

Serial No. 10101 to 10115

ADA-1 BOARD

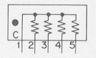


ADA-1 -COMPONENT SIDE-
1-613-954-12
HDIE-100(S)10201~

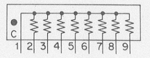
CN1	1B
CN2	1B
CN3	1C
CN4	1D
CN5	1E
CN6	1F
CN7	1H
CN8	1J
CN9	1K
D1	7G
D2	3F
D3	4F
D4	4F
D5	4F
D6	4F
D7	4F
DL1	8A
DL2	8B
DL3	9B
DL4	8C
DL5	9C
DL6	8E
DL7	9E
DL8	7H
DL9	7J
DL10	7K
IC1	2B
IC2	2B
IC3	2A
IC4	5A
IC5	5B
IC6	4B
IC7	4B
IC8	6B
IC9	7A
IC10	7B
IC11	7B
IC12	7B
IC13	8B
IC14	8B
IC15	9A
IC16	9B
IC17	9B
IC18	10B
IC19	2C
IC20	2D
IC21	2B
IC22	5C
IC23	5D
IC24	4D
IC25	4D
IC26	6D
IC27	7C
IC28	7D
IC29	7D
IC30	8D
IC31	8D
IC32	9D
IC33	9D
IC34	10C
IC35	2E
IC36	2F
IC37	2D
IC38	5E
IC39	5F
IC40	4F
IC41	4F
IC42	3F
IC43	6F
IC44	7E
IC45	7E
IC46	7F
IC47	8E
IC48	8F
IC49	9E
IC50	9F
IC51	10E
IC52	7G
IC53	1H
IC54	4H
IC55	2J
IC56	2J
IC57	4H
IC58	5H
IC59	5J
IC60	6H
IC61	6H
IC62	6J
IC63	7H
IC64	7J
IC65	1J
IC66	4J
IC67	2K
IC68	2K
IC69	4K
IC70	5K
IC71	5K
IC72	6J
IC73	6K
IC74	6K
IC75	7K
IC76	7K
IC77	1K
IC78	4K

IC79	2L
IC80	2L
IC81	4L
IC82	5L
IC83	5L
IC84	6K
IC85	6L
IC86	6L
IC87	7L
IC88	7L
IC89	8L
IC90	3B
IC91	3D
IC92	3F
IC93	4J
IC94	4K
IC95	4L
LPF1	4A
LPF2	4C
LPF3	4E
LPF4	3H
LPF5	3J
LPF6	3K
Q1	2A
Q2	2A
Q3	2B
Q4	2B
Q5	4B
Q6	2C
Q7	2C
Q8	2D
Q9	2C
Q10	4D
Q11	2E
Q12	2D
Q13	2E
Q14	2E
Q15	4F
Q16	7G
Q17	3F
Q18	4F
Q19	4F
Q20	4F
Q21	4F
Q22	4F
RV1	3B
RV2	5A
RV3	4B
RV4	3D
RV5	5C
RV6	4D
RV7	3F
RV8	5D
RV9	4F
RV10	4J
RV11	4K
RV12	4L
TP1	5B
TP2	4B
TP3	5D
TP4	4D
TP5	5F
TP6	4F
TP7	1H
TP8	1J
TP9	1K
TPE1	5B
TPE2	5C
TPE3	5E
TPE4	1H
TPE5	1K
TPE6	1L
TPE7	10B
TPE8	10D
TPE9	10E
TPE10	7H
TPE11	7J
TPE12	7K

RB6, 7, 9, 21~24, 28~31, 35~38



RB1~5, 8, 10~20, 25, 26, 27, 32, 33, 34, 39, 40, 41

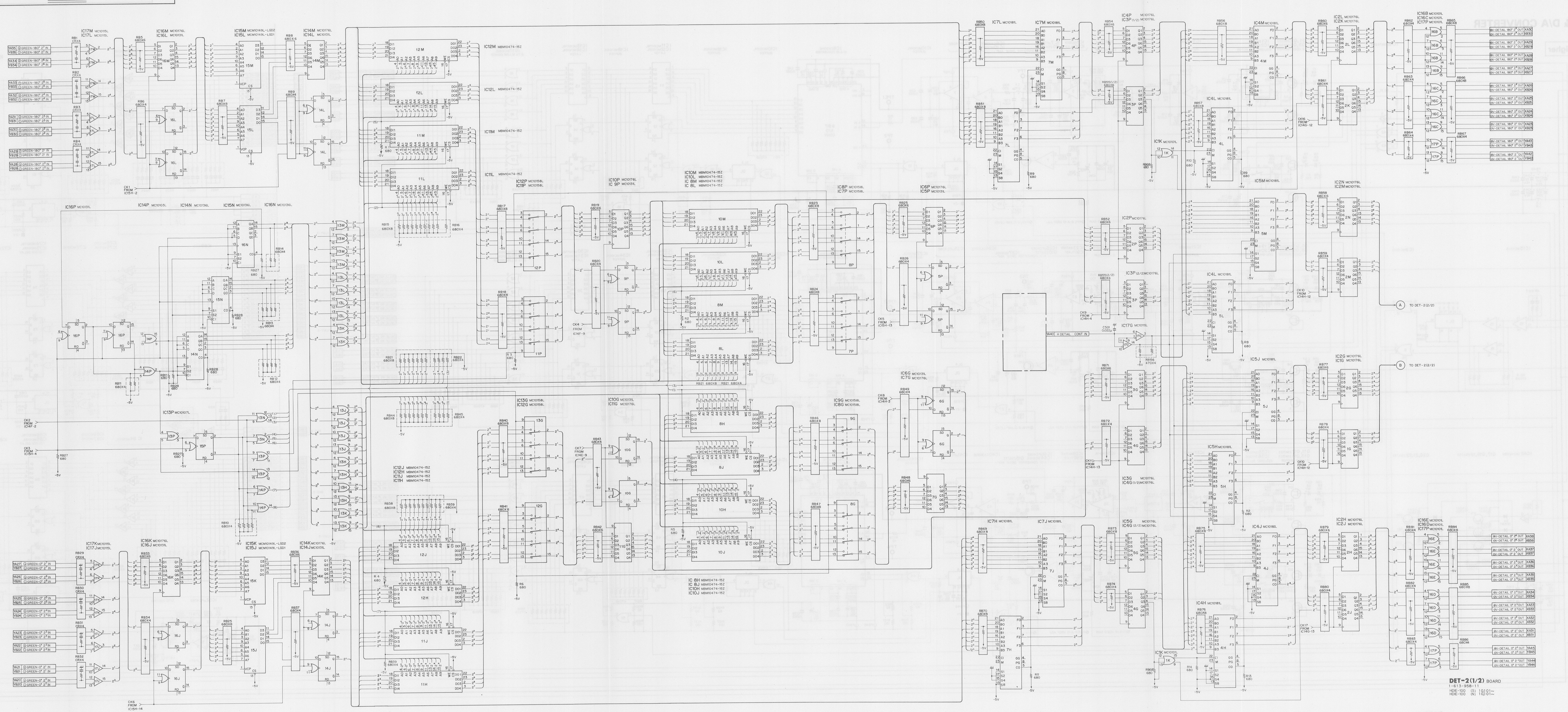


ADA-1 BOARD; A/D & D/A CONVERTER

Serial No. 10201 and higher

ADA-1 BOARD
1-613-954-12
HDIE-100 (S) 10201~

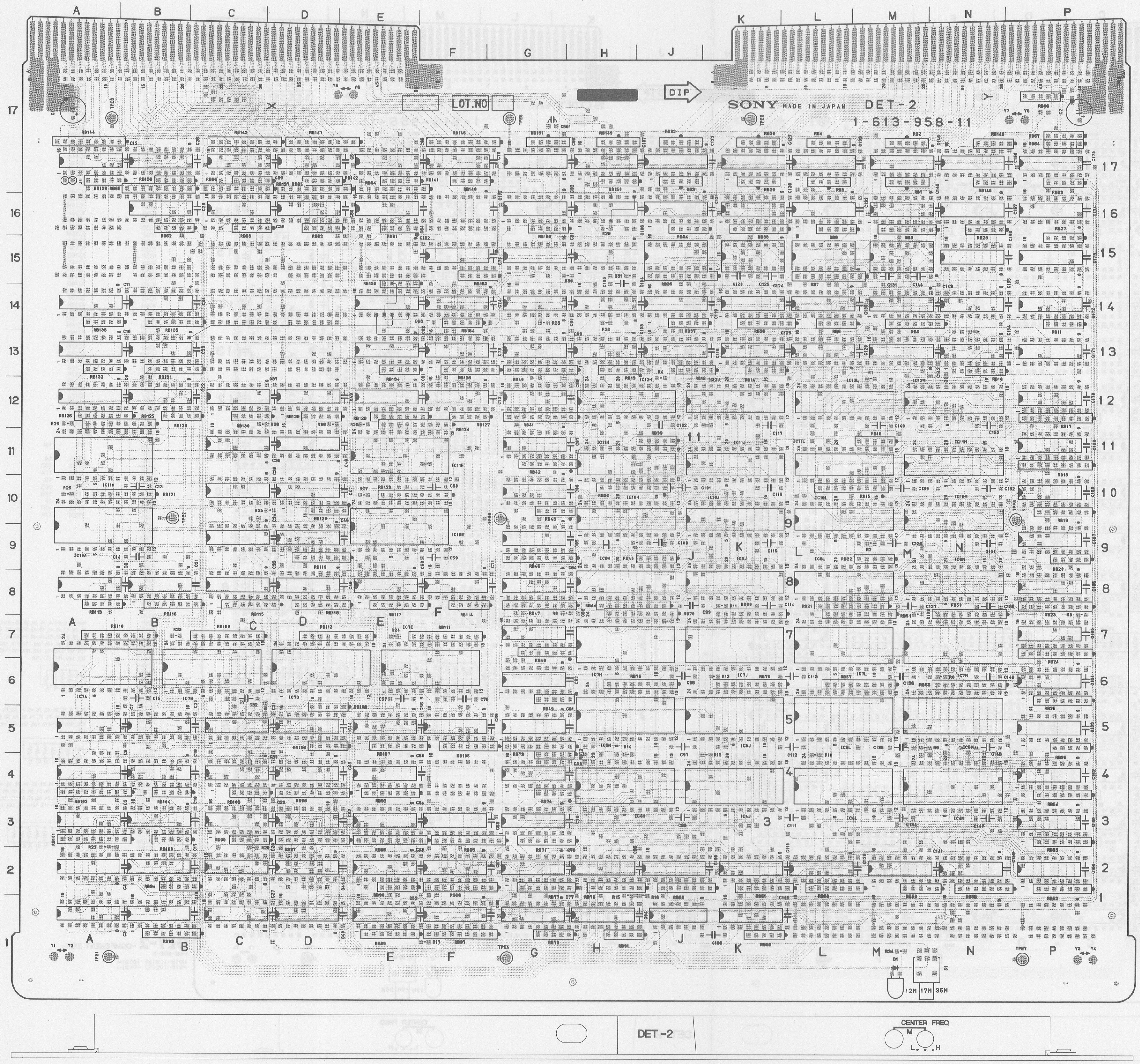
DET-2 BOARD (1/2); DIGITAL V-DETAIL GENERATOR



REF. NO.	TYPE	PIN NO. GND	PIN NO. VEE(-5V)
IC 1G	MC10176L	1,16	8
1K	MC10101L, HD10101	1,16	8
IC 2G	MC10176L	1,16	8
2H	MC10176L	1,16	8
2J	MC10176L	1,16	8
2K	MC10176L	1,16	8
2L	MC10176L	1,16	8
2M	MC10176L	1,16	8
2N	MC10176L	1,16	8
2P	MC10176L	1,16	8
IC 3G	MC10176L	1,16	8
3P	MC10176L	1,16	8
IC 4G	MC10176L	1,16	8
4H	MC10181L	1,24	12
4J	MC10181L	1,24	12
4L	MC10181L	1,24	12
4M	MC10181L	1,24	12
4P	MC10176L	1,16	8
IC 5G	MC10176L	1,16	8
5H	MC10181L	1,24	12
5J	MC10181L	1,24	12
5L	MC10181L	1,24	12
5M	MC10181L	1,24	12
5P	MC10131L, HD10131	1,16	8
IC 6G	MC10131L, HD10131	1,16	8
6P	MC10176L	1,16	8
IC 7G	MC10176L	1,16	8
7H	MC10181L	1,24	12
7L	MC10181L	1,24	12
7M	MC10181L	1,24	12
7P	MC10158L	1,16	8
IC 8G	MC10158L	1,16	8
8H	MBM10474-15Z	1,24	12
8J	MBM10474-15Z	1,24	12
8L	MBM10474-15Z	1,24	12
8M	MBM10474-15Z	1,24	12
8P	MC10158L	1,16	8
IC 9G	MC10158L	1,16	8
9P	MC10131L, HD10131	1,16	8
IC 10G	MC10131L, HD10131	1,16	8
10H	MBM10474-15Z	1,24	12
10J	MBM10474-15Z	1,24	12
10L	MBM10474-15Z	1,24	12
10M	MBM10474-15Z	1,24	12
10P	MC10176L	1,16	8
IC 11G	MC10176L	1,16	8
11H	MBM10474-15Z	1,24	12
11J	MBM10474-15Z	1,24	12
11L	MBM10474-15Z	1,24	12
11M	MBM10474-15Z	1,24	12
11P	MC10158L	1,16	8
IC 12G	MC10158L	1,16	8
12H	MBM10474-15Z	1,24	12
12J	MBM10474-15Z	1,24	12
12L	MBM10474-15Z	1,24	12
12M	MBM10474-15Z	1,24	12
12P	MC10158L	1,16	8
IC 13G	MC10158L	1,16	8
13H	MC10101L, HD10101	1,16	8
13J	MC10101L, HD10101	1,16	8
13K	MC10101L, HD10101	1,16	8
13L	MC10101L, HD10101	1,16	8
13M	MC10101L, HD10101	1,16	8
13N	MC10110L, HD10110	1,16	8
13P	MC10107L, HD10107	1,16	8
IC 14J	MC10131L, HD10131	1,16	8
14K	MC10176L	1,16	8
14L	MC10131L, HD10131	1,16	8
14M	MC10176L	1,16	8
14N	MC10136L, HD10136	1,16	8
14P	MC10103L	1,16	8
IC 15J	MCM10149L	16	8
15K	MCM10149L	16	8
15L	MCM10149L	16	8
15M	MCM10149L	16	8
15N	MC10136L, HD10136	1,16	8
15P	MC10131L, HD10131	1,16	8
IC 16B	MC10101L, HD10101	1,16	8
16C	MC10101L, HD10101	1,16	8
16D	MC10101L, HD10101	1,16	8
16E	MC10101L, HD10101	1,16	8
16J	MC10131L, HD10131	1,16	8
16K	MC10176L	1,16	8
16L	MC10131L, HD10131	1,16	8
16M	MC10176L	1,16	8
16N	MC10136L, HD10136	1,16	8
16P	MC10131L, HD10131	1,16	8
IC 17G	MC10115L	1,16	8
17J	MC10115L	1,16	8
17K	MC10115L	1,16	8
17L	MC10115L	1,16	8
17M	MC10115L	1,16	8
17P	MC10101L, HD10101	1,16	8

DET-2(1/2) BOARD
1-613-958-11
HDIE-100 (S) 10,101~
HDIE-100 (N) 10,101~

DET-2 BOARD



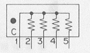
DET-2 -COMPONENT SIDE-
1-613-958-11
HDIE-100(S) 10101~
HDIE-100(N) 10101~

D1	1M
S1	1M
TPE1	1A
TPE2	10B
TPE3	17A
TPE4	1G
TPE5	10G
TPE6	17G
TPE7	1P
TPE8	10P
TPE9	17K

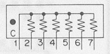
IC1A, IC1B, IC1C, IC1D, IC1E, IC1F, IC1G, IC1H, IC1J, IC1K, IC2A, IC2B, IC2C, IC2D, IC2E, IC2F, IC2G, IC2H, IC2J, IC2K, IC2L, IC2M, IC2N, IC2P, IC3A, IC3B, IC3C, IC3D, IC3E, IC3F, IC3G, IC3P, IC4A, IC4B, IC4C, IC4D, IC4E, IC4G, IC4H, IC4J, IC4L, IC4M, IC4P, IC5A, IC5B, IC5C, IC5D, IC5E, IC5F, IC5G, IC5H, IC5J, IC5L, IC5M, IC5P, IC6G, IC6P, IC7A, IC7B, IC7C, IC7D, IC7E, IC7G, IC7H, IC7J, IC7L, IC7M, IC7P, IC8A, IC8B, IC8C, IC8D, IC8E, IC8F, IC8G, IC8H, IC8J, IC8L, IC8M, IC8P, IC9C, IC9D, IC9G, IC9P, IC10A, IC10C, IC10D, IC10E, IC10G, IC10H, IC10J, IC10L, IC10M, IC10P, IC11A, IC11C, IC11D, IC11E, IC11G, IC11H, IC11J, IC11L, IC11M, IC11P, IC12A, IC12B, IC12C, IC12D, IC12E, IC12F, IC12G, IC12H, IC12J, IC12L, IC12M, IC12P

IC13A, IC13B, IC13E, IC13F, IC13G, IC13H, IC13J, IC13K, IC13L, IC13M, IC13N, IC13P, IC14A, IC14B, IC14E, IC14F, IC14G, IC14H, IC14J, IC14K, IC14L, IC14M, IC14N, IC14P, IC15F, IC15G, IC15H, IC15J, IC15K, IC15L, IC15M, IC15N, IC15P, IC16B, IC16C, IC16D, IC16E, IC16G, IC16H, IC16J, IC16K, IC16L, IC16M, IC16N, IC16P, IC17A, IC17B, IC17C, IC17D, IC17E, IC17F, IC17G, IC17H, IC17J, IC17K, IC17L, IC17M, IC17N, IC17P

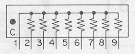
RB1~4, 6, 9~14, 16, 20, 22, 26~32, 34, 37, 39, 43, 45, 49, 59, 62, 63, 64, 67, 72, 74, 78, 81, 82, 83, 86, 90, 91, 94, 99, 100, 103, 104, 106, 108, 113, 114, 120, 125, 127, 129, 130, 132, 134, 136~142, 145, 148~151, 153~156



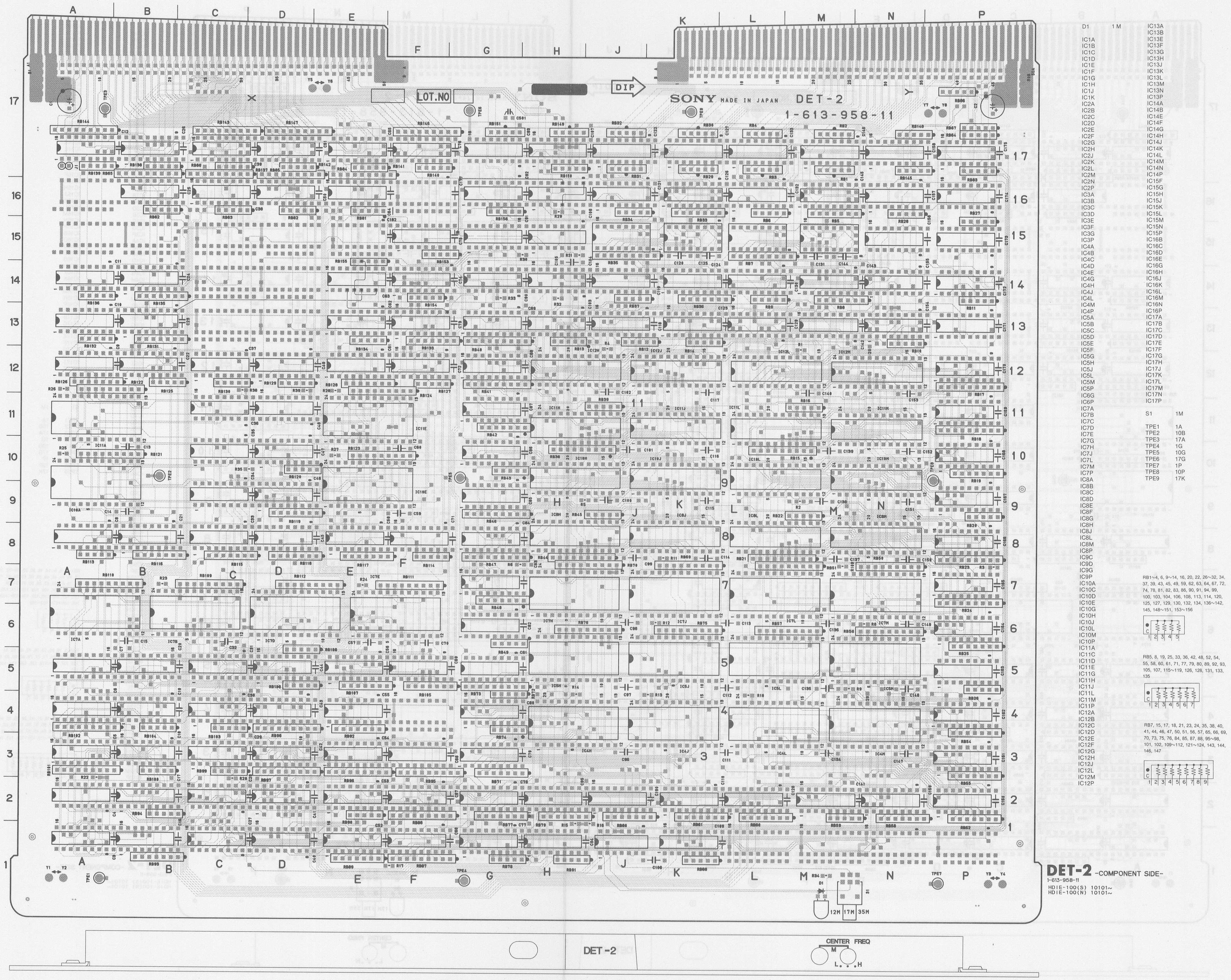
RB5, 8, 19, 25, 33, 36, 42, 48, 52, 54, 55, 58, 60, 61, 71, 77, 79, 80, 89, 92, 93, 105, 107, 115~119, 126, 128, 131, 133, 135



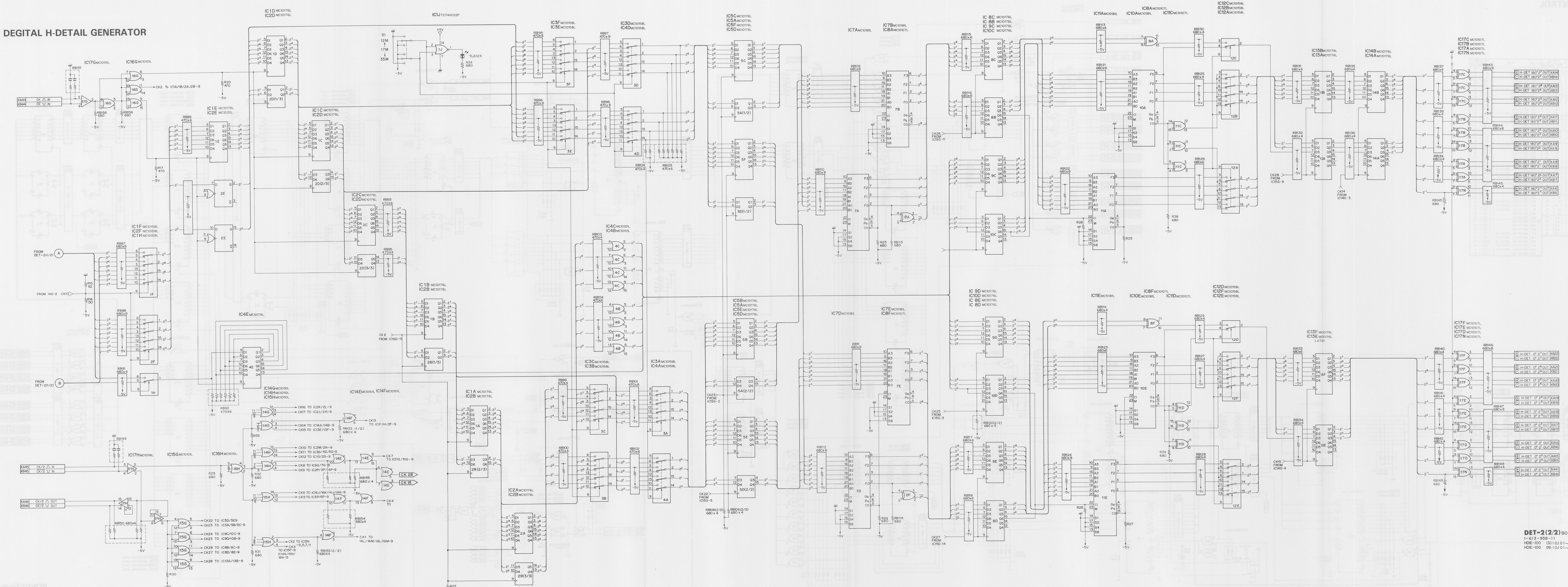
RB7, 15, 17, 18, 21, 23, 24, 35, 38, 40, 41, 44, 46, 47, 50, 51, 56, 57, 65, 66, 69, 70, 73, 75, 76, 84, 85, 87, 88, 95~98, 101, 102, 109~112, 121~124, 143, 144, 146, 147



DET-2 BOARD


SONY MADE IN JAPAN DET-2
1-613-958-11
LOT.NO
DIP
DET-2 -COMPONENT SIDE-
1-613-958-11
HDIE-100(S) 10101~
HDIE-100(N) 10101~
DET-2
CENTER FREQ
M
L
H

DET-2 BOARD (2/2); DIGITAL H-DETAIL GENERATOR



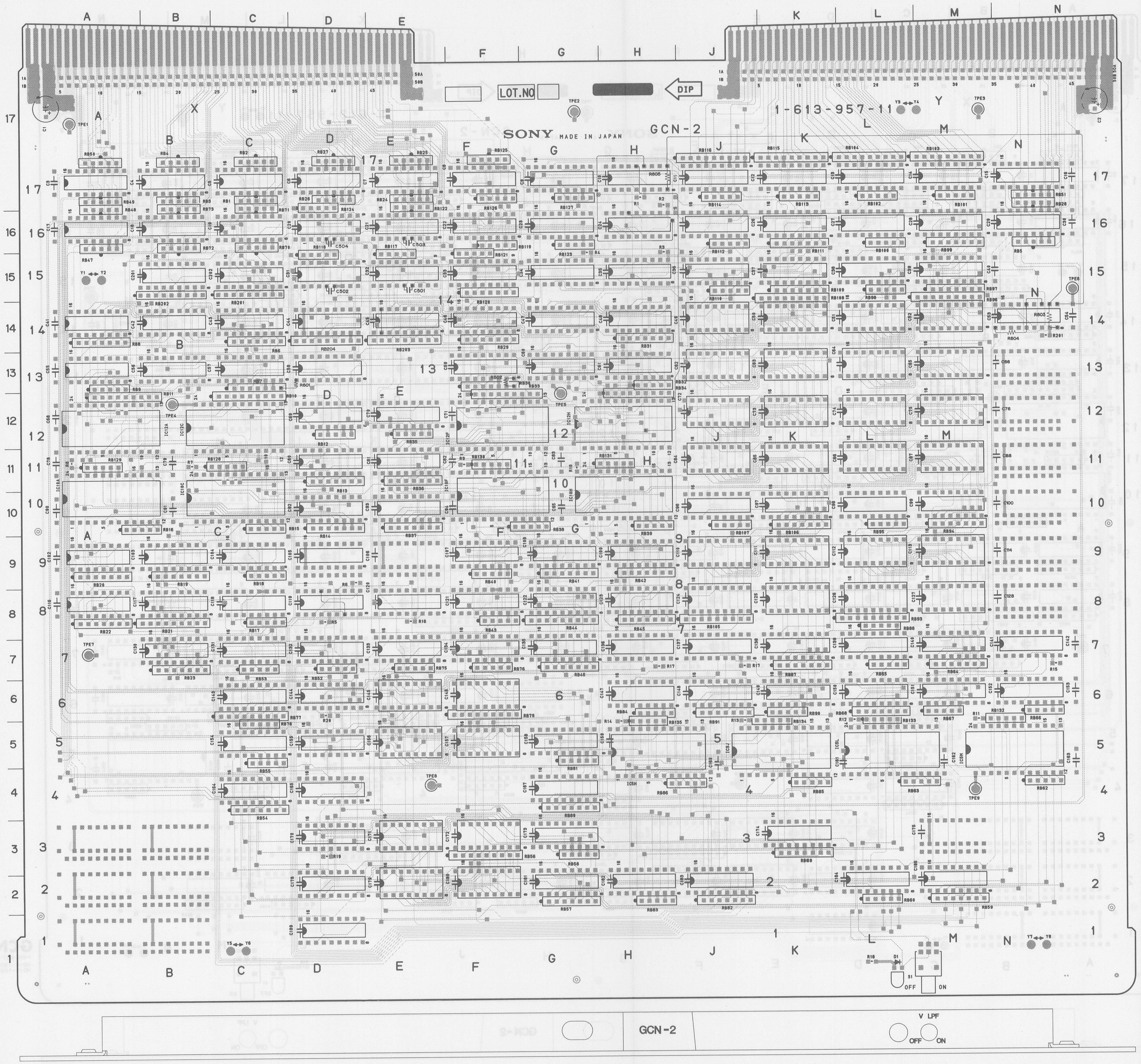
REF.NO.	TYPE	PIN NO. GND	PIN NO. VEE(-5V)
IC 1A	MC10176L	1,16	8
1B	MC10176L	1,16	8
1C	MC10176L	1,16	8
1D	MC10176L	1,16	8
1E	MC10176L	1,16	8
1F	MC10158L	16	8
1H	MC10158L	16	8
IC 2A	MC10176L	1,16	8
2B	MC10176L	1,16	8
2C	MC10176L	1,16	8
2D	MC10176L	1,16	8
2E	MC10131L, HD10131	1,16	8
2F	MC10158L	16	8
IC 3A	MC10158L	16	8
3B	MC10158L	16	8
3C	MC10158L	16	8
3D	MC10158L	16	8
3E	MC10158L	16	8
3F	MC10158L	16	8
IC 4A	MC10158L	16	8
4B	MC10101L, HD10101	1,16	8
4C	MC10101L, HD10101	1,16	8
4D	MC10158L	16	8
4E	MC10176L	1,16	8
IC 5A	MC10176L	1,16	8
5B	MC10176L	1,16	8
5C	MC10176L	1,16	8
5D	MC10176L	1,16	8
5E	MC10176L	1,16	8
5F	MC10176L	1,16	8
IC 7A	MC10181L	1,24	12
7B	MC10181L	1,24	12
7D	MC10181L	1,24	12
7E	MC10181L	1,24	12
IC 8A	MC10107L, HD10107	1,16	8
8B	MC10176L	1,16	8
8C	MC10176L	1,16	8
8D	MC10176L	1,16	8
8E	MC10176L	1,16	8
8F	MC10107L, HD10107	1,16	8
IC 9C	MC10176L	1,16	8
9D	MC10176L	1,16	8
IC 10A	MC10181L	1,24	8
10C	MC10176L	1,16	8
10D	MC10176L	1,16	8
10E	MC10181L	1,24	8
IC 11A	MC10181L	1,24	8
11C	MC10107L, HD10107	1,16	8
11D	MC10107L, HD10107	1,16	8
11E	MC10181L	1,24	8
IC 12A	MC10158L	16	8
12B	MC10158L	16	8
12C	MC10158L	16	8
12D	MC10158L	16	8
12E	MC10158L	16	8
12F	MC10158L	16	8
IC 13A	MC10176L	1,16	8
13B	MC10176L	1,16	8
13E	MC10176L	1,16	8
13F	MC10176L	1,16	8
IC 14A	MC10176L	1,16	8
14B	MC10176L	1,16	8
14E	MC10101L, HD10101	1,16	8
14F	MC10101L, HD10101	1,16	8
14G	MC10110L, HD10110	1,15,16	8
14H	MC10110L, HD10110	1,15,16	8
IC 15F	MC10101L, HD10101	1,16	8
15G	MC10101L, HD10101	1,16	8
15H	MC10110L, HD10110	1, 15, 16	8
IC 16G	MC10101L, HD10101	1,16	8
16H	MC10110L, HD10110	1, 15, 16	8
IC 17A	MC10107L, HD10107	1,16	8
17B	MC10107L, HD10107	1,16	8
17C	MC10107L, HD10107	1,16	8
17D	MC10107L, HD10107	1,16	8
17E	MC10107L, HD10107	1,16	8
17F	MC10107L, HD10107	1,16	8
17G	MC10115L	1,16	8
17H	MC10116L, HD10116	1,16	8
17N	MC10107L, HD10107	1,16	8

DET-2(2/2) BOARD
1-613-958-11
HDIE-100 (S) 10,101~
HDIE-100 (N) 10,101~

GCN-2 BOARD (1/2); H/V DETAIL RATIO CONTROL

REF NO.	TYPE	PIN NO. GND	PIN NO. VEE(-5V)
IC 1D	MC10103L	1, 16	8
IC 2D	MC10101L, HD10101	1, 16	8
2E	MCM10149L	16	8
2F	MCM10149L	16	8
2G	MC10176L	1, 16	8
2L	MC10176L	1, 16	8
2M	MC10176L	1, 16	8
IC 3D	MC10101L, HD10101	1, 16	8
3E	MCM10149L	16	8
3F	MCM10149L	1, 16	8
3G	MC10176L	1, 16	8
3K	MC10104L, HD10104	1, 16	8
IC 4C	MC10176L	1, 16	8
IC 5C	MC10176L	1, 16	8
5L	MC10181L	1, 24	8
5M	MC10181L	1, 24	8
IC 6L	MC10158L	16	8
6M	MC10158L	16	8
6N	MC10162L	1, 16	8
IC 7B	MC10176L	1, 16	8
7C	MC10101L, HD10101	1, 16	8
7D	MC10101L, HD10101	1, 16	8
7L	MC10131L, HD10131	1, 16	8
7M	MC10176L	1, 16	8
7N	MC10101L, HD10101	1, 16	8
IC 8A	MC10176L	1, 16	8
8B	MC10176L	1, 16	8
8C	MC10162L	1, 16	8
8D	MC10101L, HD10101	1, 16	8
8E	MC10158L	16	8
8L	MCM10149L	16	8
8M	MCM10149L	16	8
IC 9A	MC10158L	16	8
9B	MC10158L	16	8
9C	MC10103L, HD10103	1, 16	8
9L	MCM10149L	16	8
9M	MCM10149L	16	8
IC 10A	MC10181L	1, 24	12
10C	MC10181L	1, 24	12
10D	MC10176L	1, 16	8
10L	MC10131L, HD10131	1, 16	8
10M	MC10176L	1, 16	8
IC 11D	MC10176L	1, 16	8
11L	MCM10149L	16	8
11M	MCM10149L	16	8
IC 12A	MC10181L	1, 24	12
12C	MC10181L	1, 24	12
12D	MC10104L, HD10104	1, 16	8
12L	MCM10149L	16	8
12M	MCM10149L	16	8
IC 13A	MC10176L	1, 16	8
13B	MC10176L	1, 16	8
13C	MC10176L	1, 16	8
13D	MC10107L, HD10107	1, 16	8
13L	MCM10149L	16	8
13M	MCM10149L	16	8
IC 14A	MC10176L	1, 16	8
14B	MC10176L	1, 16	8
14C	MC10176L	1, 16	8
14L	MCM10149L	16	8
14M	MCM10149L	16	8
14N	MC10101L, HD10101	1, 16	8
IC 15B	MC10176L	1, 16	8
15C	MC10176L	1, 16	8
15D	MC10115L	1, 16	8
15E	MC10115L	1, 16	8
15F	MC10101L, HD10101	1, 16	8
15G	MC10110L, HD10110	1, 15, 16	8
15H	MC10110L, HD10110	1, 15, 16	8
15L	MC10131L, HD10131	1, 16	8
15M	MC10176L	1, 16	8
IC 16A	MC10115L	1, 16	8
16D	MC10115L	1, 16	8
16E	MC10115L	1, 16	8
16F	MC10162L	1, 16	8
16G	MC10131L, HD10131	1, 16	8
16H	MC10110L, HD10110	1, 15, 16	8
16L	MC10131L, HD10131	1, 16	8
16M	MC10176L	1, 16	8
16N	MC10115L	1, 16	8
IC 17A	MC10115L	1, 16	8
17B	MC10115L	1, 16	8
17C	MC10115L	1, 16	8
17F	MC10116L, HD10116	1, 16	8
17G	MC10101L, HD10101	1, 16	8
17H	MC10110L, HD10110	1, 15, 16	8
17L	MC10101L, HD10101	1, 16	8
17M	MC10101L, HD10101	1, 16	8
17N	MC10115L	1, 16	8

GCN-2 BOARD



GCN-2 -COMPONENT SIDE-

1-613-957-11

HDIE-100(S) 10101~

HDIE-100(N) 10101~

D1	1 L
IC1D	
IC2D	
IC2E	
IC2F	
IC2G	
IC2H	
IC2J	
IC2L	
IC2M	
IC3D	
IC3E	
IC3F	
IC3G	
IC3K	
IC4C	
IC4D	
IC4G	
IC5C	
IC5D	
IC5E	
IC5F	
IC5G	
IC5H	
IC5J	
IC5L	
IC5M	
IC6C	
IC6D	
IC6E	
IC6F	
IC6H	
IC6J	
IC6K	
IC6L	
IC6M	
IC6N	
IC7B	
IC7C	
IC7D	
IC7E	
IC7F	
IC7G	
IC7H	
IC7J	
IC7K	
IC7L	
IC7M	
IC7N	
IC8A	
IC8B	
IC8C	
IC8D	
IC8E	
IC8F	
IC8G	
IC8H	
IC8J	
IC8K	
IC8L	
IC8M	
IC9A	
IC9B	
IC9C	
IC9F	
IC9G	
IC9H	
IC9J	
IC9K	
IC9L	
IC9M	
IC10A	
IC10C	
IC10D	
IC10E	
IC10F	
IC10H	
IC10J	
IC10K	
IC10L	
IC10M	
IC11D	
IC11E	
IC11J	
IC11K	
IC11L	
IC11M	
IC12A	
IC12C	
IC12D	
IC12E	
IC12F	
IC12H	
IC12J	
IC12K	
IC12L	
IC12M	
IC13A	
IC13B	
IC13C	
IC13D	
IC13F	
IC13G	
IC13H	
IC13J	
IC13K	
IC13L	
IC13M	
IC14A	
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IC15C	
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IC15H	
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IC15M	
IC16A	
IC16B	
IC16C	
IC16D	
IC16E	
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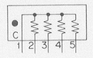
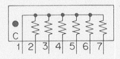
IC16G	
IC16H	
IC16J	
IC16K	
IC16L	
IC16H	
IC16N	
IC17A	
IC17B	
IC17C	
IC17D	
IC17E	
IC17F	
IC17G	
IC17H	
IC17J	
IC17K	
IC17L	
IC17M	
IC17N	
S1	1M
TPE1	17A
TPE2	17
TPE3	17M
TPE4	12B
TPE5	12G
TPE6	15N
TPE7	7A
TPE8	4E
TPE9	4M

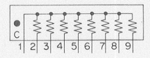
RB1~5, 9, 12, 15~18, 24~28, 32, 35, 38, 39, 40, 43, 48~53, 55, 58, 60, 62, 63, 65, 66, 67, 70~73, 75, 76, 78, 81, 83~86, 88, 90, 95, 98, 100, 101, 102, 107, 110, 112, 113, 114, 117, 118, 119, 121~135



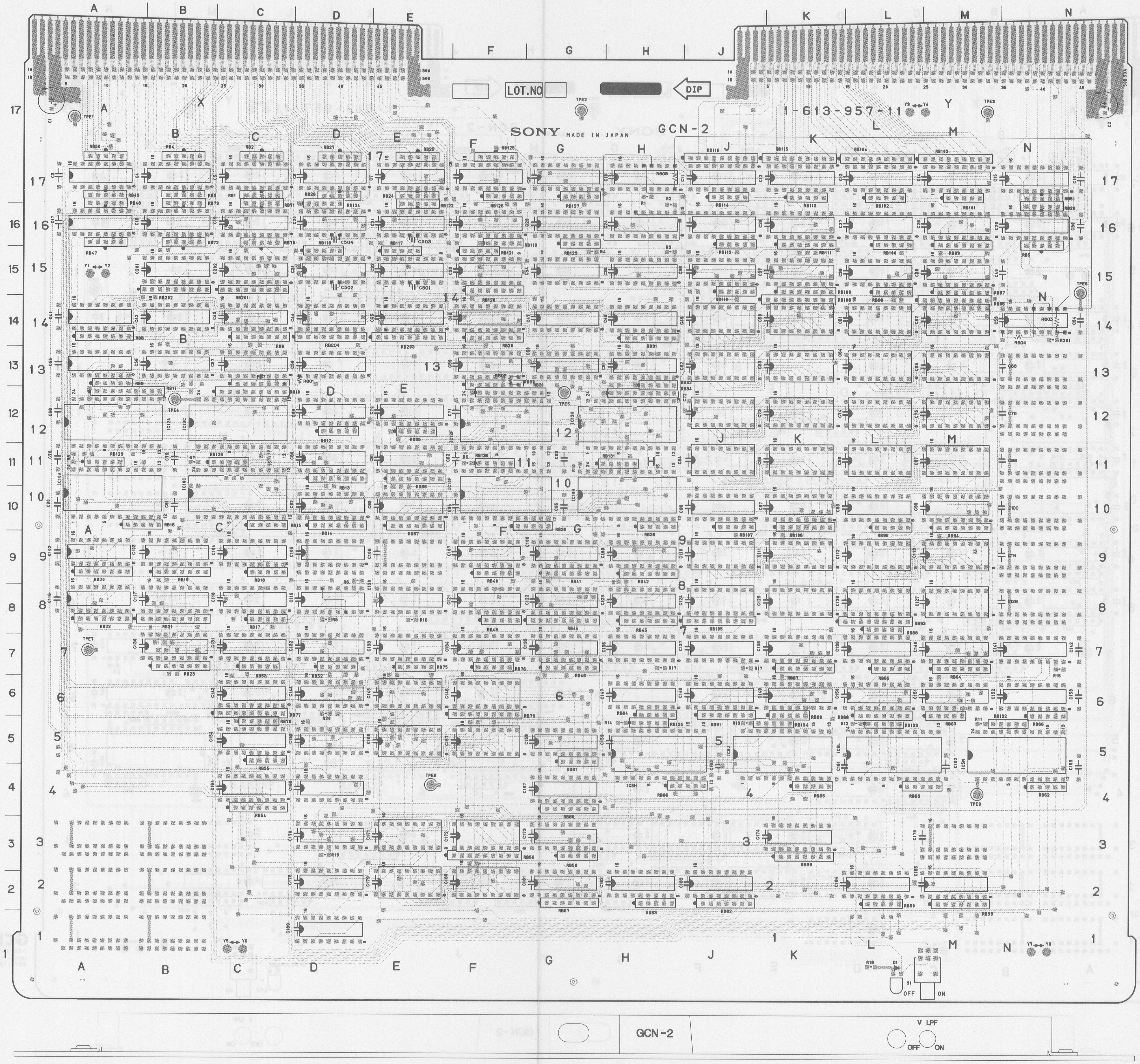
RB6, 7, 8, 13, 14, 19, 20, 22, 23, 29, 30, 31, 36, 37, 41, 42, 45, 46, 54, 57, 59, 64, 68, 69, 80, 82, 87, 91, 94, 97, 99, 106, 109, 111, 120



RB10, 11, 21, 33, 34, 44, 56, 77, 79, 93, 96, 103, 104, 105, 108, 115, 116, 201, 202, 203



GCN-2 BOARD



GCN-2 -COMPONENT SIDE-
1-613-957-11
HDIE-100(S) 10101~
HDIE-100(N) 10101~

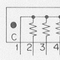
D1	1L

IC1D, IC2D, IC2E, IC2F, IC2G, IC2H, IC2J, IC2L, IC2M, IC3D, IC3E, IC3F, IC3G, IC3K, IC4C, IC4D, IC4G, IC5C, IC5D, IC5E, IC5F, IC5G, IC5H, IC5J, IC5L, IC5M, IC6C, IC6D, IC6E, IC6F, IC6H, IC6J, IC6K, IC6L, IC6M, IC6N, IC7B, IC7C, IC7D, IC7E, IC7F, IC7G, IC7H, IC7J, IC7K, IC7L, IC7M, IC7N, IC8A, IC8B, IC8C, IC8D, IC8E, IC8F, IC8G, IC8H, IC8J, IC8K, IC8L, IC8M, IC9A, IC9B, IC9C, IC9F, IC9G, IC9H, IC9J, IC9K, IC9L, IC9M, IC10A, IC10C, IC10D, IC10E, IC10F, IC10H, IC10J, IC10K, IC10L, IC10M, IC11D, IC11E, IC11J, IC11K, IC11L, IC11M, IC12A, IC12C, IC12D, IC12E, IC12F, IC12H, IC12J, IC12K, IC12L, IC12M, IC13A, IC13B, IC13C, IC13D, IC13F, IC13G, IC13H, IC13J, IC13K, IC13L, IC13M

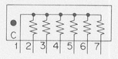
IC14A, IC14B, IC14C, IC14E, IC14F, IC14G, IC14H, IC14J, IC14K, IC14L, IC14M, IC14N, IC15B, IC15C, IC15D, IC15E, IC15F, IC15G, IC15H, IC15J, IC15K, IC15L, IC15M, IC16A, IC16B, IC16C, IC16D, IC16E, IC16F, IC16G, IC16H, IC16J, IC16K, IC16L, IC16H, IC16N, IC17A, IC17B, IC17C, IC17D, IC17E, IC17F, IC17G, IC17H, IC17J, IC17K, IC17L, IC17M, IC17N

S1	1M
TPE1	17A
TPE2	17
TPE3	17M
TPE4	12B
TPE5	12G
TPE6	15N
TPE7	7A
TPE8	4E
TPE9	4M

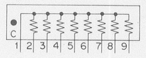
RB1~5, 9, 12, 15~18, 24~28, 32, 35, 38, 39, 40, 43, 48~53, 55, 58, 60, 62, 63, 65, 66, 67, 70~73, 75, 76, 78, 81, 83~86, 88, 90, 95, 98, 100, 101, 102, 107, 110, 112, 113, 114, 117, 118, 119, 121~135



RB6, 7, 8, 13, 14, 19, 20, 22, 23, 29, 30, 31, 36, 37, 41, 42, 45, 46, 54, 57, 59, 64, 68, 69, 80, 82, 87, 91, 94, 97, 99, 106, 109, 111, 120



RB10, 11, 21, 33, 34, 44, 56, 77, 79, 93, 96, 103, 104, 105, 108, 115, 116, 201, 202, 203



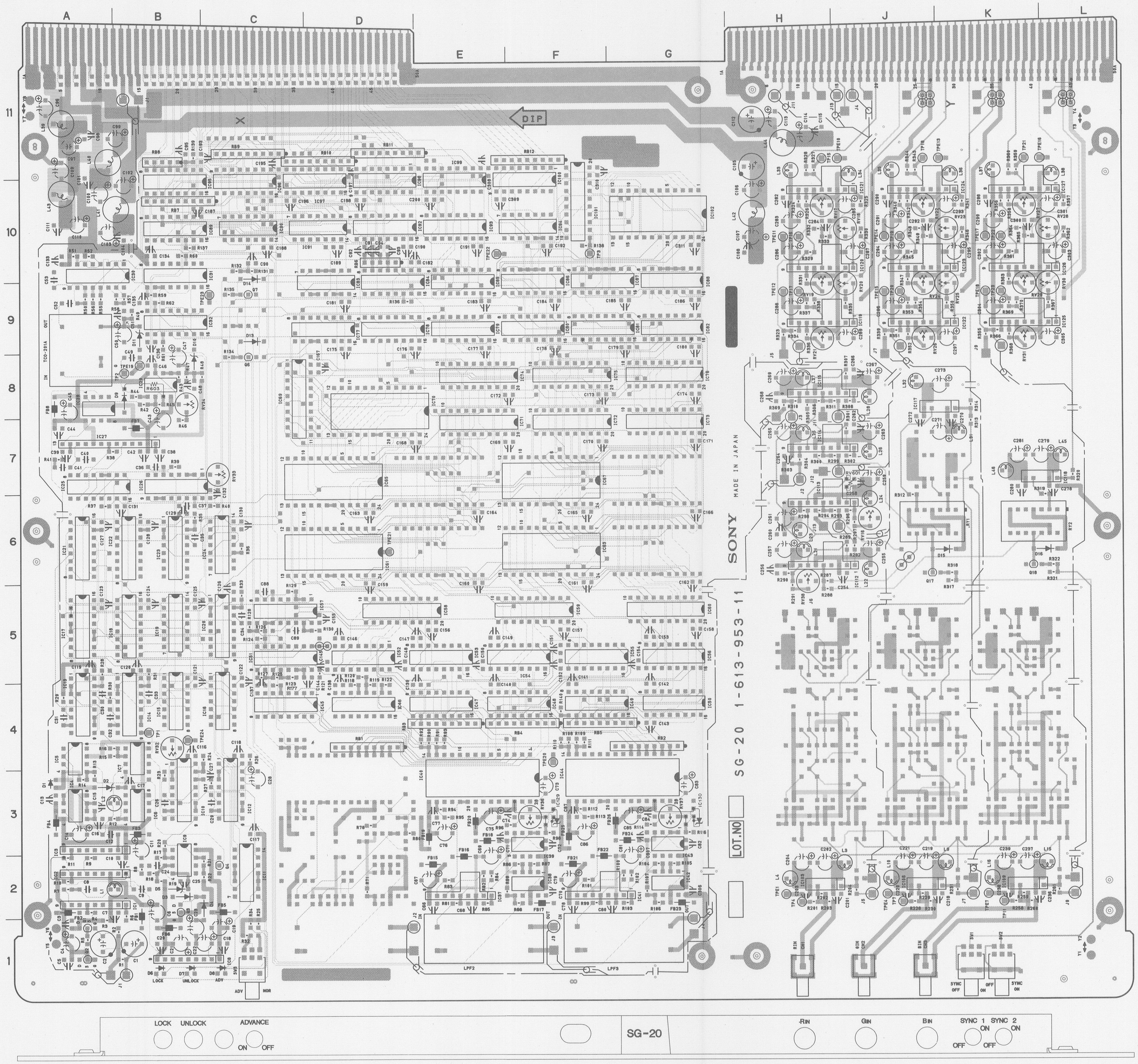
GCN-2 BOARD (2/2); CORING, DETAIL LEVEL CONTROL SYSTEM

REF NO.	TYPE	PIN NO. GND	PIN NO. VEE(-5V)
IC 2H	MC10176L	1,16	8
2J	MC10176L	1,16	8
IC 3K	MC10104L, HD10104	1,16	8
IC 4D	MC10103L	1,16	8
4G	MC10176L	1,16	8
IC 5C	MC10176L	1,16	8
5D	MC10101L, HD10101	1,16	8
5E	MCM10149L	16	8
5F	MCM10149L	16	8
5G	MC10176L	1,16	8
5H	MC10181L	1,24	12
5J	MC10181L	1,24	12
IC 6C	MC10176L	1,16	8
6D	MC10101L, HD10101	1,16	8
6E	MCM10149L	16	8
6F	MCM10149L	16	8
6H	MC10162L	1,16	8
6J	MC10158L	16	8
6K	MC10158L	16	8
IC 7E	MC10101L, HD10101	1,16	8
7F	MC10101L, HD10101	1,16	8
7G	MC10176L	1,16	8
7H	MC10158L	16	8
7J	MC10101L, HD10101	1,16	8
7K	MC10176L	1,16	8
7L	MC10131L, HD10131	1,16	8
7N	MC10101L, HD10101	1,16	8
IC 8D	MC10101L, HD10101	1,16	8
8F	MC10162L	1,16	8
8G	MC10176L	1,16	8
8H	MC10176L	1,16	8
8J	MCM10149L	16	8
8K	MCM10149L	16	8
IC 9F	MC10103L, HD10103	1,16	8
9G	MC10158L	16	8
9H	MC10158L	16	8
9J	MCM10149L	16	8
9K	MCM10149L	16	8
IC 10E	MC10176L	1,16	8
10J	MC10131L, HD10131	1,16	8
10K	MC10176L	1,16	8
IC 11E	MC10176L	1,16	8
11F	MC10181L	1,24	12
11H	MC10181L	1,24	12
11J	MCM10149L	16	8
11K	MCM10149L	16	8
IC 12E	MC10104L, HD10104	1,16	8
12F	MC10181L	1,24	12
12H	MC10181L	1,24	12
12J	MCM10149L	16	8
12K	MCM10149L	16	8
IC 13D	MC10107L, HD10107	1,16	8
13F	MC10176L	1,16	8
13G	MC10176L	1,16	8
13H	MC10176L	1,16	8
13J	MCM10149L	16	8
13K	MCM10149L	16	8
IC 14D	MC10176L	1,16	8
14E	MC10176L	1,16	8
IC 14F	MC10176L	1,16	8
14G	MC10176L	1,16	8
14H	MC10176L	1,16	8
14J	MCM10149L	16	8
14K	MCM10149L	16	8
14N	MC10101L, HD10101	1,16	8
IC 15D	MC10115L	1,16	8
15E	MC10115L	1,16	8
15F	MC10101L, HD10101	1,16	8
15G	MC10110L, HD10110	1,15,16	8
15H	MC10110L, HD10110	1,15,16	8
15J	MC10131L, HD10131	1,16	8
15K	MC10176L	1,16	8
IC 16B	MC10115L	1,16	8
16C	MC10115L	1,16	8
16D	MC10115L	1,16	8
16E	MC10115L	1,16	8
16F	MC10162L	1,16	8
16G	MC10131L, HD10131	1,16	8
16H	MC10110L, HD10110	1,15,16	8
16J	MC10131L, HD10131	1,16	8
16K	MC10176L	1,16	8
16N	MC10115L	1,16	8
IC 17D	MC10115L	1,16	8
17E	MC10115L	1,16	8
17F	MC10116L, HD10116	1,16	8
17G	MC10101L, HD10101	1,16	8
17H	MC10110L, HD10110	1,15,16	8
17J	MC10101L, HD10101	1,16	8
17K	MC10101L, HD10101	1,16	8
17N	MC10115L	1,16	8

GCN-2(2/2) BOARD
1-613-957-11
HDIE-100 (S) 10,101 ~
HDIE-100 (N) 10,101 ~

SG-20 BOARD (1/2); SYNC GENERATOR Serial No. 10101 to 10115

SG-20 BOARD

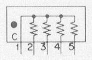


SG-20S -COMPONENT SIDE-
1-613-953-11
HDIE-100 10,101~10115

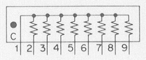
CN1	1H
CN2	1J
CN3	1J
D1	3A
D2	3A
D3	2B
D4	2B
D5	2B
D6	1B
D7	1B
D8	1C
D9	8B
D10	8B
D11	9B
D12	9C
D13	9C
D14	10C
D15	6K
D16	6L
IC1	2A
IC2	2A
IC3	3A
IC4	3A
IC5	4A
IC6	3B
IC7	4B
IC8	1B
IC9	2B
IC10	3B
IC11	2C
IC12	3C
IC13	4A
IC14	4B
IC15	4B
IC16	4C
IC17	5A
IC18	5B
IC19	5B
IC20	5C
IC21	6A
IC22	6B
IC23	6B
IC24	6C
IC25	7A
IC26	7B
IC27	7A
IC28	8A
IC29	8B
IC30	10A
IC31	10B
IC32	9B
IC37	2E
IC38	2F
IC39	3F
IC40	3E
IC41	2F
IC42	2G
IC43	3G
IC44	3G
IC45	4C
IC46	4D
IC47	4E
IC48	4F
IC49	4F
IC50	4G
IC51	5C
IC52	5D
IC53	5E
IC54	5F
IC55	5F
IC56	5G
IC57	5C
IC58	5D
IC59	5F
IC60	5G
IC61	6D
IC62	6E
IC63	6F
IC64	6G
IC65	7D
IC66	7E
IC67	7F
IC68	7G
IC69	8C
IC70	8D
IC71	7E
IC72	7F
IC73	7G
IC74	8E
IC75	8F
IC76	8G
IC77	9D
IC78	9D
IC79	9E
IC80	9F
IC81	9F
IC82	9G

IC83	9D
IC84	9D
IC85	9E
IC86	9F
IC87	9F
IC88	9G
IC89	10B
IC90	10C
IC91	10D
IC92	10D
IC93	10E
IC94	10F
IC95	10B
IC96	10C
IC97	10D
IC98	10D
IC99	10E
IC100	10F
IC101	10F
IC102	10G
IC103	2H
IC106	2J
IC109	2K
IC112	6H
IC113	6H
IC114	7H
IC115	8H
IC117	8K
IC118	7L
IC119	9H
IC120	10H
IC121	10H
IC122	9J
IC123	10J
IC124	10J
IC126	10K
IC127	10K
IC129	3F
IC130	3G
LPF2	1F
LPF3	1G
Q1	1A
Q2	1A
Q3	2B
Q4	2C
Q5	9C
Q6	8C
Q7	9C
Q8	3J
Q17	6J
Q18	6K
RV3	4J
RV4	4J
RV5	5H
RV15	5K
RV16	6J
RV17	10H
RV18	10J
RV19	9H
RV20	9J
RV21	9H
RV22	10J
RV23	10K
RV24	9J
RV25	9K
RV26	9J
RV27	10K
RV28	10L
RV29	9K
RV30	9L
RV31	9K
RV32	4B
RV33	7C
RV34	8B
RV35	3D
RV36	3F
RV37	3G
RV601	6J
RY1	6J
RY2	6K

RB6, RB8



RB1~5, 7, 9~12



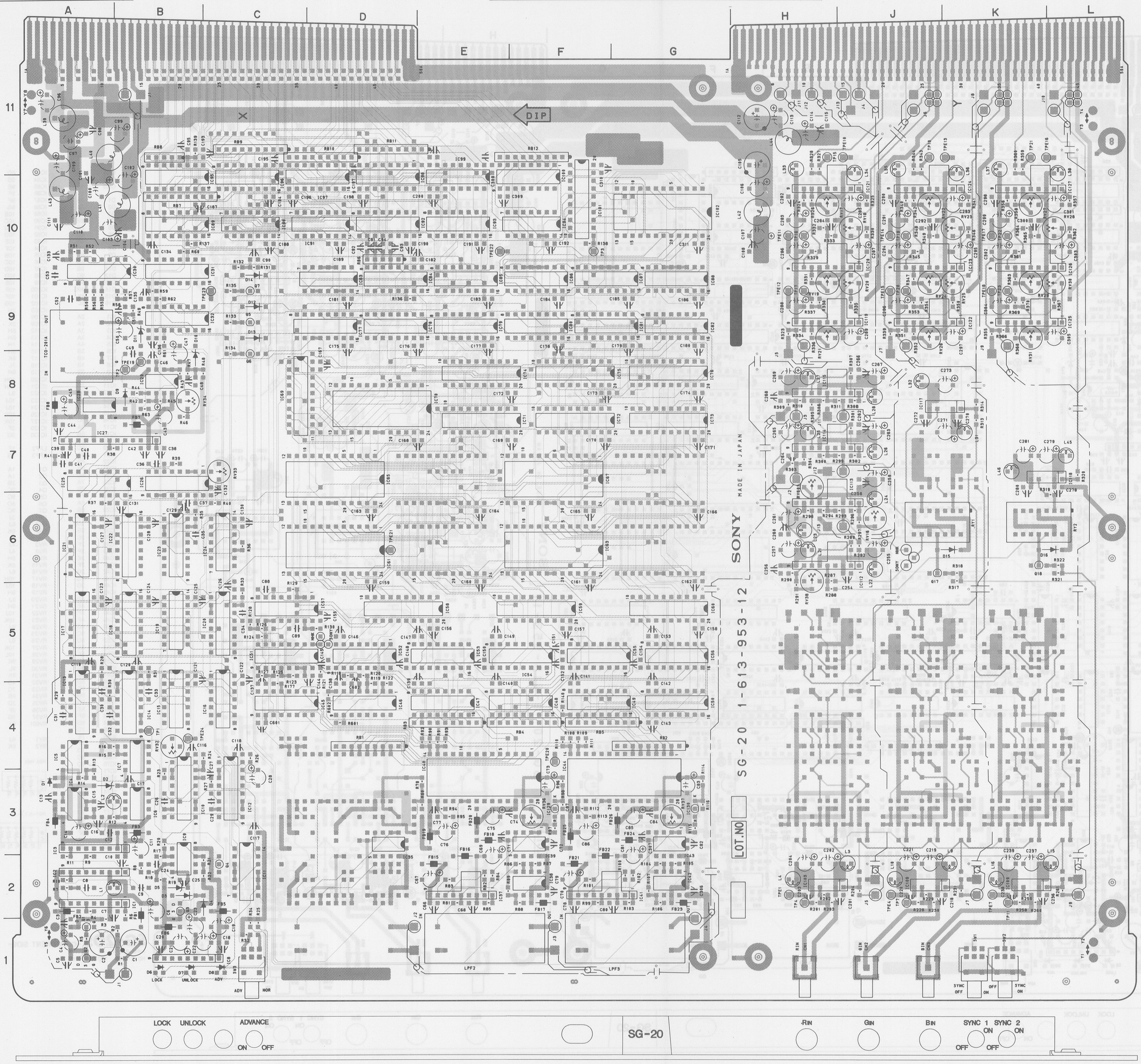
SW1	1K
SW2	1K
SW3	1C
TCO201A	9A
TP1	4B
TP2	8B
TP3	10F
TP4	2H
TP7	2J
TP11	2K
TP15	11H
TP16	10H
TP17	9H
TP18	11J
TP19	10J
TP20	9J
TP21	11K
TP22	10K
TP23	9K
TPE1	2H
TPE4	2J
TPE7	2K
TPE10	11J
TPE11	10H
TPE12	9H
TPE13	11K
TPE14	10J
TPE15	9J
TPE16	11L
TPE17	10K
TPE18	9K
TPE19	8B
TPE20	4F
TPE21	6D
TPE22	10E
TPE23	9C
TPE24	4B

SG-20 BOARD (1/2); SYNC GENERATOR

Serial No. 10201 and higher

Serial No. 10201 and higher

SG-20 BOARD



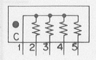
SG-20S -COMPONENT SIDE-
1-613-953-12
HDIE-100 10,201~

CN1	1H
CN2	1J
CN3	1J
D1	3A
D2	3A
D3	2B
D4	2B
D5	2B
D6	1B
D7	1B
D8	1C
D9	8B
D10	8B
D11	9B
D12	9C
D13	9C
D14	10C
D15	6K
D16	6L
IC1	2A
IC2	2A
IC3	3A
IC4	3A
IC5	4A
IC6	3B
IC7	4B
IC8	1B
IC9	2B
IC10	3B
IC11	2C
IC12	3C
IC13	4A
IC14	4B
IC15	4B
IC16	4C
IC17	5A
IC18	5B
IC19	5B
IC20	5C
IC21	6A
IC22	6B
IC23	6B
IC24	6C
IC25	7A
IC26	7B
IC27	7A
IC28	8A
IC29	8B
IC30	10A
IC31	10B
IC32	9B
IC37	2E
IC38	2F
IC39	3F
IC40	3E
IC41	2F
IC42	2G
IC43	3G
IC44	3G
IC45	4C
IC46	4D
IC47	4E
IC48	4F
IC49	4F
IC50	4G
IC51	5C
IC52	5D
IC53	5E
IC54	5F
IC55	5F
IC56	5G
IC57	5C
IC58	5D
IC59	5F
IC60	5G
IC61	6D
IC62	6E
IC63	6F
IC65	7D
IC67	7F
IC68	7G
IC69	8C
IC70	8D
IC71	7E
IC72	7F
IC73	7G
IC74	8E
IC75	8F
IC76	8G
IC77	9D
IC78	9D
IC79	9E
IC80	9F
IC81	9F
IC82	9G
IC83	9D
IC84	9D

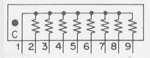
IC85	9E
IC86	9F
IC87	9F
IC88	9G
IC89	10B
IC90	10C
IC91	10D
IC92	10D
IC93	10E
IC94	10F
IC95	10B
IC96	10C
IC97	10D
IC98	10D
IC99	10E
IC100	10F
IC101	10F
IC102	10G
IC103	2H
IC106	2J
IC109	2K
IC112	6H
IC113	6H
IC114	7H
IC115	8H
IC117	8K
IC118	7L
IC119	9H
IC120	10H
IC121	10H
IC122	9J
IC123	10J
IC124	10J
IC126	10K
IC127	10K
IC129	3F
IC130	3G
LPF2	1F
LPF3	1G
Q1	1A
Q2	1A
Q3	2B
Q4	2C
Q5	9C
Q6	8C
Q7	9C
Q8	3J
Q17	6J
Q18	6K
RV3	4J
RV4	4J
RV5	5H
RV15	5K
RV16	6J
RV17	10H
RV18	10J
RV19	9H
RV20	9J
RV21	9H
RV22	10J
RV23	10K
RV24	9J
RV25	9K
RV26	9J
RV27	10K
RV28	10L
RV29	9K
RV30	9L
RV31	9K
RV32	4B
RV33	7C
RV34	8B
RV35	3D
RV36	3F
RV37	3G
RV601	6H
RY1	6J
RY2	6K

SW1	1K
SW2	1K
SW3	1C
TCO201A	9A
TP1	4B
TP2	8B
TP3	10F
TP4	2H
TP7	2J
TP11	2K
TP15	11H
TP16	10H
TP17	9H
TP18	11J
TP19	10J
TP20	9J
TP21	11K
TP22	10K
TP23	9K
TPE1	2H
TPE4	2J
TPE7	2K
TPE10	11J
TPE11	10H
TPE12	9H
TPE13	11K
TPE14	10J
TPE15	9J
TPE16	11L
TPE17	10K
TPE18	9K
TPE19	8B
TPE20	4F
TPE21	6D
TPE22	10E
TPE23	9C
TPE24	4B

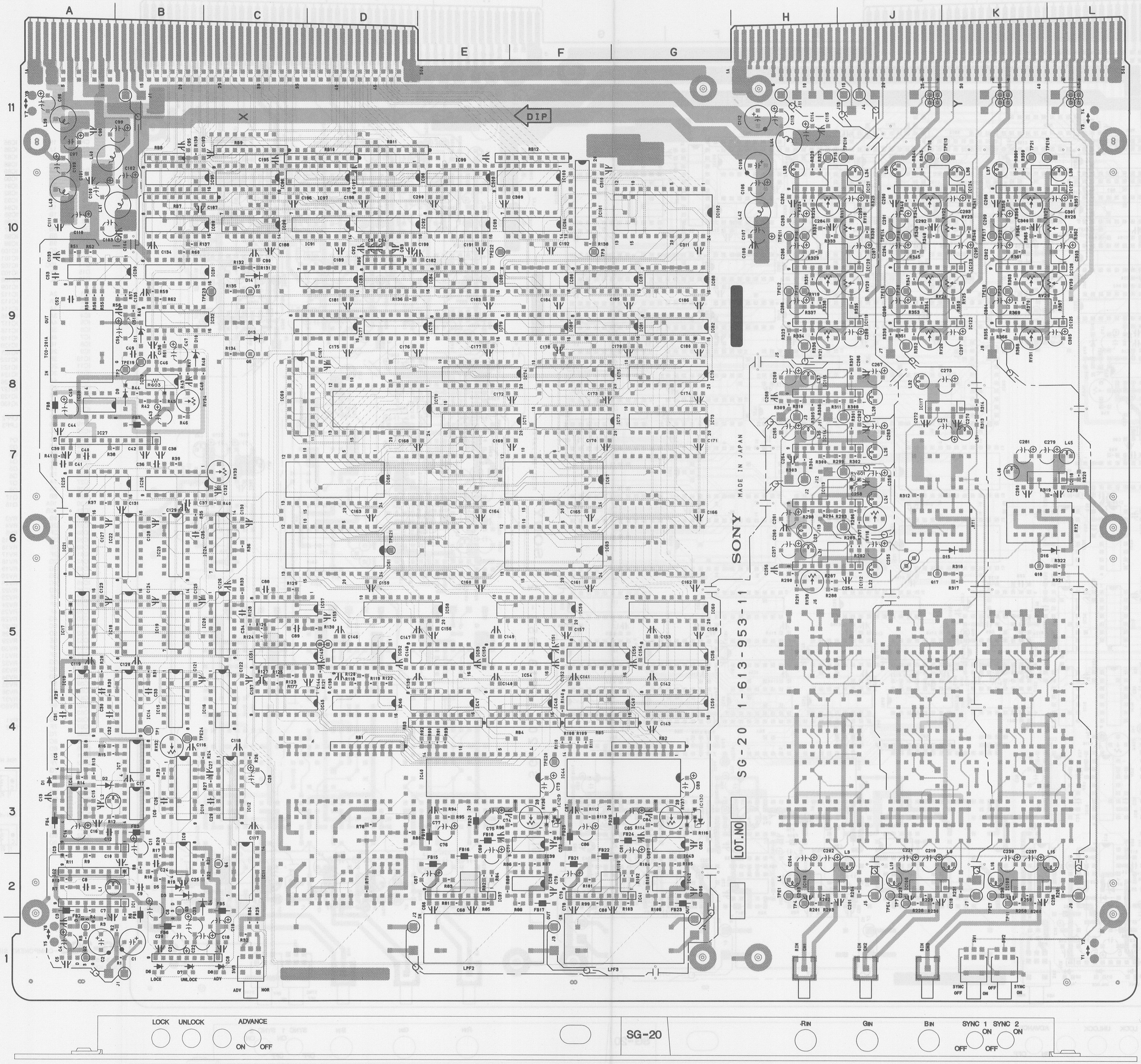
RB6, RB8



RB1~5, 7, 9~12



SG-20 BOARD



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CN2	1J
CN3	1J
D1	3A
D2	3A
D3	2B
D4	2B
D5	2B
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D7	1B
D8	1C
D9	8B
D10	8B
D11	9B
D12	9C
D13	9C
D14	10C
D15	6K
D16	6L
IC1	2A
IC2	2A
IC3	3A
IC4	3A
IC5	4A
IC6	3B
IC7	4B
IC8	1B
IC9	2B
IC10	3B
IC11	2C
IC12	3C
IC13	4A
IC14	4B
IC15	4B
IC16	4C
IC17	5A
IC18	5B
IC19	5B
IC20	5C
IC21	6A
IC22	6B
IC23	6B
IC24	6C
IC25	7A
IC26	7B
IC27	7A
IC28	8A
IC29	8B
IC30	10A
IC31	10B
IC32	9B
IC37	2E
IC38	2F
IC39	3F
IC40	3E
IC41	2F
IC42	2G
IC43	3G
IC44	3G
IC45	4C
IC46	4D
IC47	4E
IC48	4F
IC49	4F
IC50	4G
IC51	5C
IC52	5D
IC53	5E
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IC59	5F
IC60	5G
IC61	6D
IC62	6E
IC63	6F
IC64	6G
IC65	7D
IC66	7E
IC67	7F
IC68	7G
IC69	8C
IC70	8D
IC71	7E
IC72	7F
IC73	7G
IC74	8E
IC75	8F
IC76	8G
IC77	9D
IC78	9D
IC79	9E
IC80	9F
IC81	9F
IC82	9G

IC83	9D
IC84	9D
IC85	9E
IC86	9F
IC87	9F
IC88	9G
IC89	10B
IC90	10C
IC91	10D
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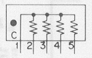
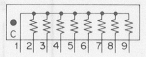
IC93	10E
IC94	10F
IC95	10B
IC96	10C
IC97	10D
IC98	10D
IC99	10E
IC100	10F
IC101	10F
IC102	10G
IC103	2H
IC106	2J
IC109	2K
IC112	6H
IC113	6H
IC114	7H
IC115	8H
IC117	8K
IC118	7L
IC119	9H
IC120	10H
IC121	10H
IC122	9J
IC123	10J
IC124	10J
IC126	10K
IC127	10K
IC129	3F
IC130	3G
LPF2	1F
LPF3	1G
Q1	1A
Q2	1A
Q3	2B
Q4	2C
Q5	9C
Q6	8C
Q7	9C
Q8	3J
Q17	6J
Q18	6K
RV3	4J
RV4	4J
RV5	5H
RV15	5K
RV16	6J
RV17	10H
RV18	10J
RV19	9H
RV20	9J
RV21	9H
RV22	10J
RV23	10K
RV24	9J
RV25	9K
RV26	9J
RV27	10K
RV28	10L
RV29	9K
RV30	9L
RV31	9K
RV32	4B
RV33	7C
RV34	8B
RV35	3D
RV36	3F
RV37	3G
RV601	6J
RY1	6J
RY2	6K

SW1	1K
SW2	1K
SW3	1C
TCO201A	9A
TP1	4B
TP2	8B
TP3	10F
TP4	2H
TP7	2J
TP11	2K
TP15	11H
TP16	10H
TP17	9H
TP18	11J
TP19	10J
TP20	9J
TP21	11K
TP22	10K
TP23	9K
TPE1	2H
TPE4	2J
TPE7	2K
TPE10	11J
TPE11	10H
TPE12	9H
TPE13	11K
TPE14	10J
TPE15	9J
TPE16	11L
TPE17	10K
TPE18	9K
TPE19	8B
TPE20	4F
TPE21	6D
TPE22	10E
TPE23	9C
TPE24	4B

RB6, RB8



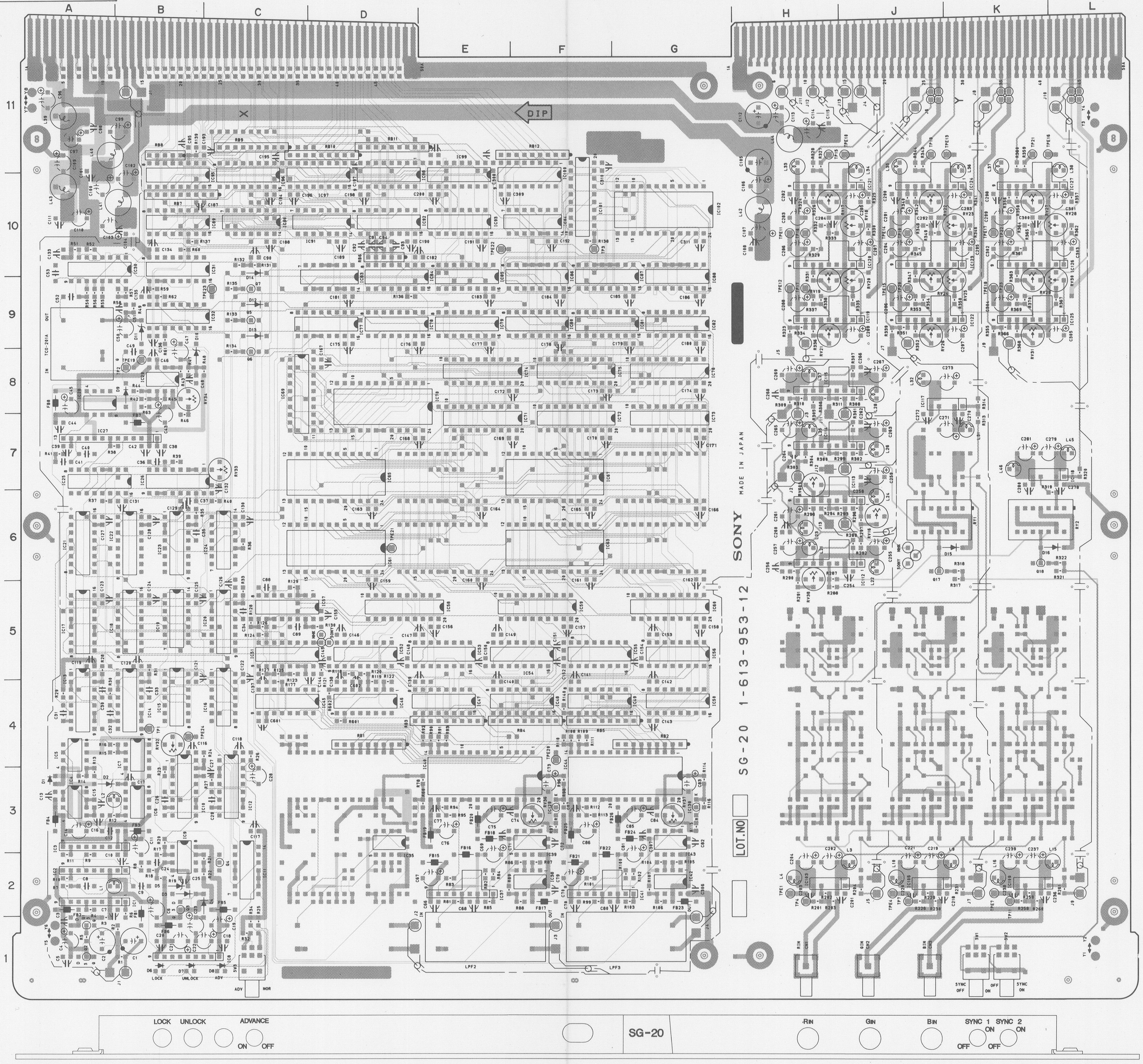
RB1~5, 7, 9~12



SG-20 (2/2)

Serial No. 10201 and higher

SG-20 BOARD



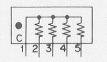
SG-20S -COMPONENT SIDE-
1-613-953-12
HDIE-100 10,201~

CN1	1H
CN2	1J
CN3	1J
D1	3A
D2	3A
D3	2B
D4	2B
D5	2B
D6	1B
D7	1B
D8	1C
D9	8B
D10	8B
D11	9B
D12	9C
D13	9C
D14	10C
D15	6K
D16	6L
IC1	2A
IC2	2A
IC3	3A
IC4	3A
IC5	4A
IC6	3B
IC7	4B
IC8	1B
IC9	2B
IC10	3B
IC11	2C
IC12	3C
IC13	4A
IC14	4B
IC15	4B
IC16	4C
IC17	5A
IC18	5B
IC19	5B
IC20	5C
IC21	6A
IC22	6B
IC23	6B
IC24	6C
IC25	7A
IC26	7B
IC27	7A
IC28	8A
IC29	8B
IC30	10A
IC31	10B
IC32	9B
IC37	2E
IC38	2F
IC39	3F
IC40	3E
IC41	2F
IC42	2G
IC43	3G
IC44	3G
IC45	4C
IC46	4D
IC47	4E
IC48	4F
IC49	4F
IC50	4G
IC51	5C
IC52	5D
IC53	5E
IC54	5F
IC55	5F
IC56	5G
IC57	5C
IC58	5D
IC59	5F
IC60	5G
IC61	6D
IC62	6E
IC63	6F
IC65	7D
IC67	7F
IC68	7G
IC69	8C
IC70	8D
IC71	7E
IC72	7F
IC73	7G
IC74	8E
IC75	8F
IC76	8G
IC77	9D
IC78	9D
IC79	9E
IC80	9F
IC81	9F
IC82	9G
IC83	9D
IC84	9D

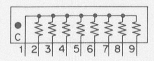
IC85	9E
IC86	9F
IC87	9F
IC88	9G
IC89	10B
IC90	10C
IC91	10D
IC92	10D
IC93	10E
IC94	10F
IC95	10B
IC96	10C
IC97	10D
IC98	10D
IC99	10E
IC100	10F
IC101	10F
IC102	10G
IC103	2H
IC106	2J
IC109	2K
IC112	6H
IC113	6H
IC114	7H
IC115	8H
IC117	8K
IC118	7L
IC119	9H
IC120	10H
IC121	10H
IC122	9J
IC123	10J
IC124	10J
IC126	10K
IC127	10K
IC129	3F
IC130	3G
LPF2	1F
LPF3	1G
Q1	1A
Q2	1A
Q3	2B
Q4	2C
Q5	9C
Q6	8C
Q7	9C
Q8	3J
Q17	6J
Q18	6K
RV3	4J
RV4	4J
RV5	5H
RV15	5K
RV16	6J
RV17	10H
RV18	10J
RV19	9H
RV20	9J
RV21	9H
RV22	10J
RV23	10K
RV24	9J
RV25	9K
RV26	9J
RV27	10K
RV28	10L
RV29	9K
RV30	9L
RV31	9K
RV32	4B
RV33	7C
RV34	8B
RV35	3D
RV36	3F
RV37	3G
RV601	6H
RY1	6J
RY2	6K

SW1	1K
SW2	1K
SW3	1C
TCO201A	9A
TP1	4B
TP2	8B
TP3	10F
TP4	2H
TP7	2J
TP11	2K
TP15	11H
TP16	10H
TP17	9H
TP18	11J
TP19	10J
TP20	9J
TP21	11K
TP22	10K
TP23	9K
TPE1	2H
TPE4	2J
TPE7	2K
TPE10	11J
TPE11	10H
TPE12	9H
TPE13	11K
TPE14	10J
TPE15	9J
TPE16	11L
TPE17	10K
TPE18	9K
TPE19	8B
TPE20	4F
TPE21	6D
TPE22	10E
TPE23	9C
TPE24	4B

RB6, RB8

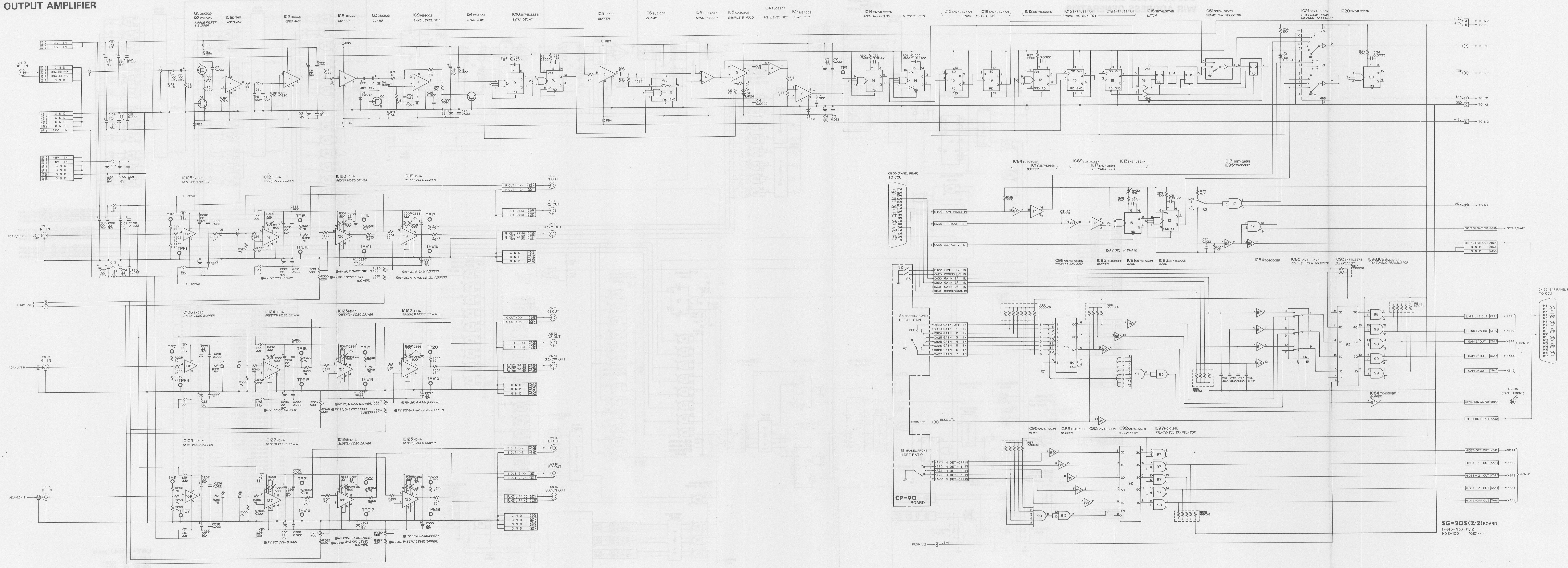


RB1~5, 7, 9~12

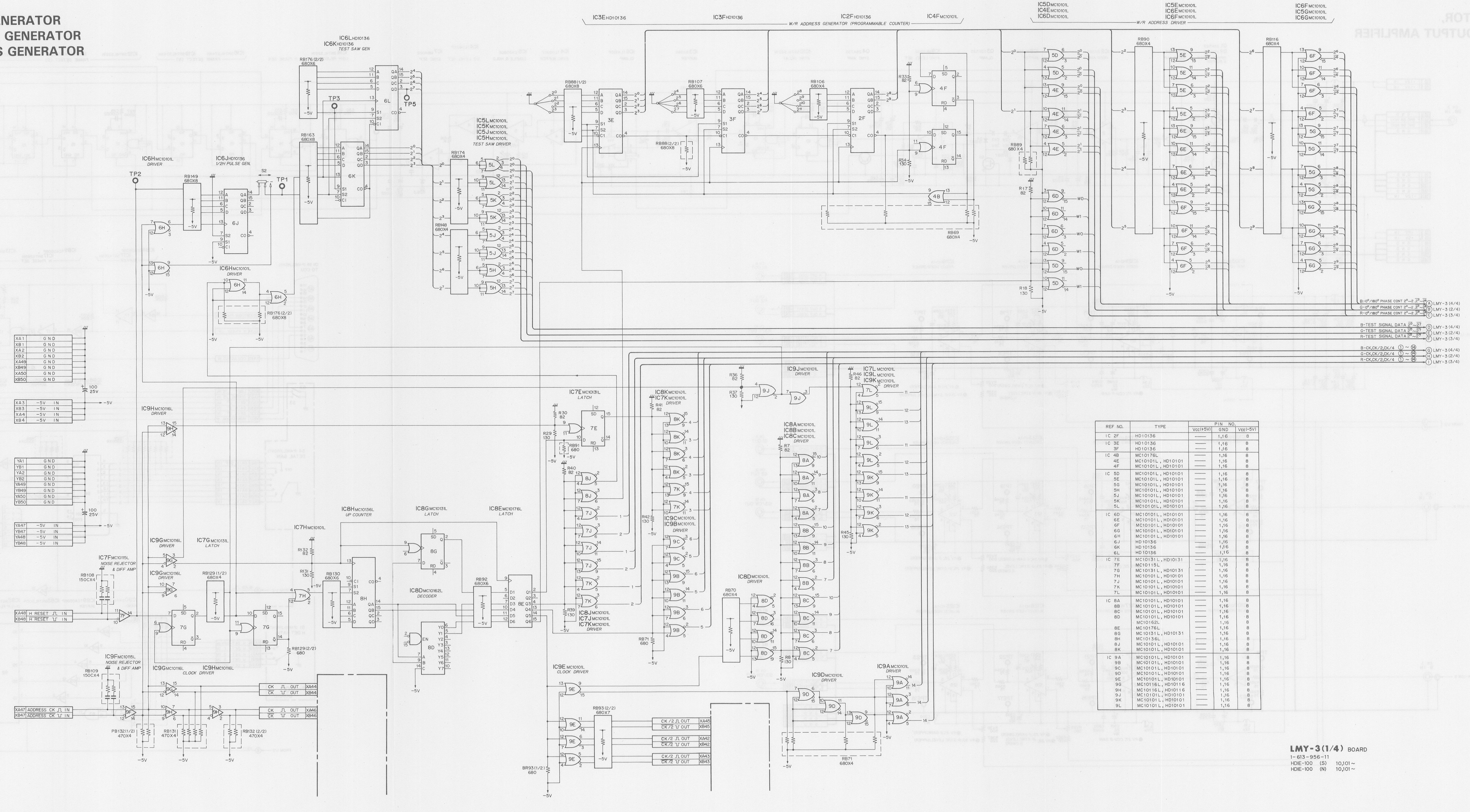


SG-20 (2/2) SG-20 (2/2)

SG-20 BOARD (2/2); SYNC GENERATOR, R,G,B, VIDEO OUTPUT AMPLIFIER



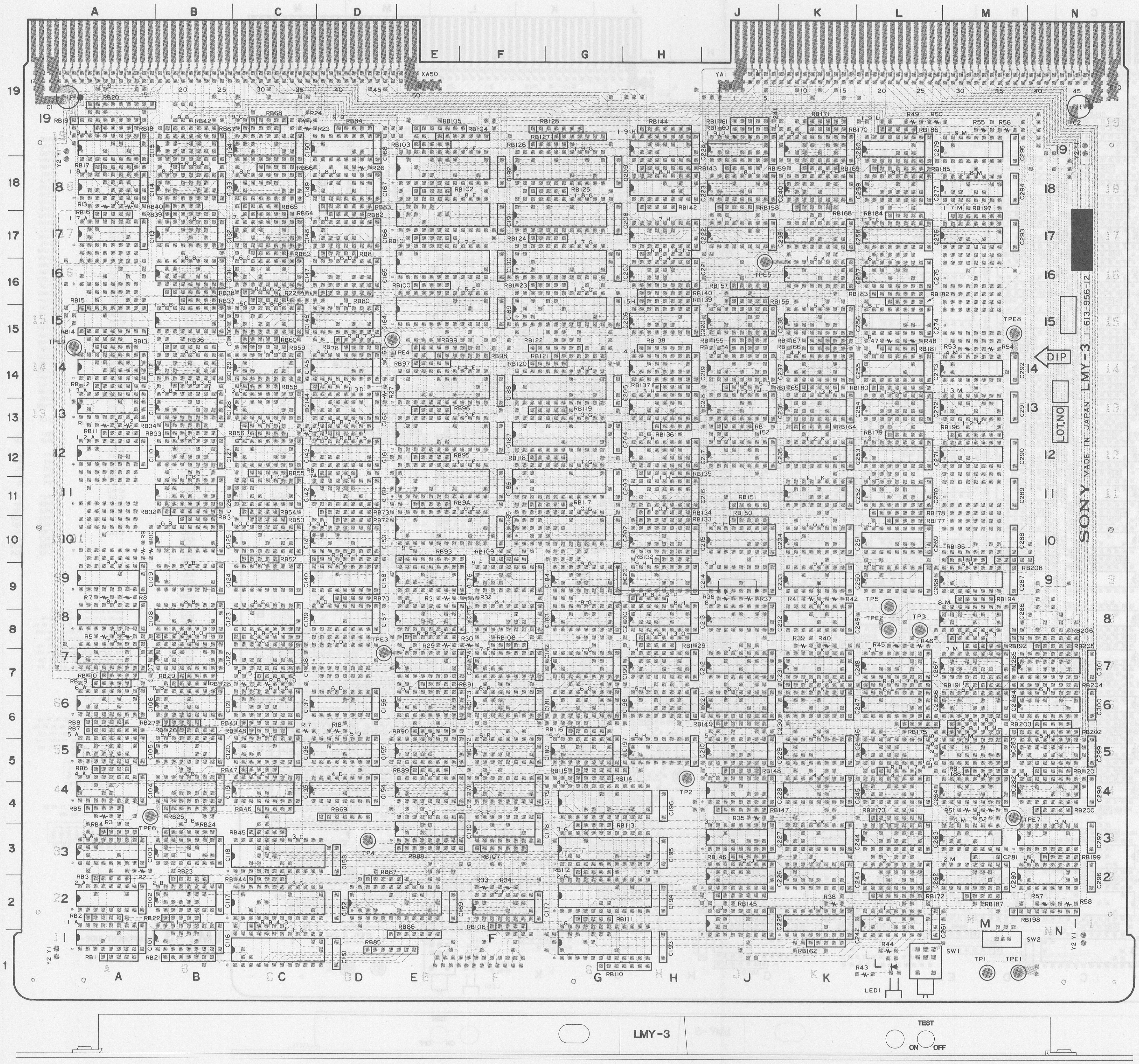
LMY-3 BOARD (1/4); TEST SAW GENERATOR
CLOCK PULSE GENERATOR
W/R ADDRESS GENERATOR



REF NO.	TYPE	PIN NO. Vcc(+5V)	GND	VEE(-5V)
IC 2F	HD10136	——	1,16	8
IC 3E	HD10136	——	1,16	8
3F	HD10136	——	1,16	8
IC 4B	MC10176L	——	1,16	8
4E	MC10101L, HD10101	——	1,16	8
4F	MC10101L, HD10101	——	1,16	8
IC 5D	MC10101L, HD10101	——	1,16	8
5E	MC10101L, HD10101	——	1,16	8
5G	MC10101L, HD10101	——	1,16	8
5H	MC10101L, HD10101	——	1,16	8
5J	MC10101L, HD10101	——	1,16	8
5K	MC10101L, HD10101	——	1,16	8
5L	MC10101L, HD10101	——	1,16	8
IC 6D	MC10101L, HD10101	——	1,16	8
6E	MC10101L, HD10101	——	1,16	8
6F	MC10101L, HD10101	——	1,16	8
6G	MC10101L, HD10101	——	1,16	8
6H	MC10101L, HD10101	——	1,16	8
6J	HD10136	——	1,16	8
6K	HD10136	——	1,16	8
6L	HD10136	——	1,16	8
IC 7E	MC10131L, HD10131	——	1,16	8
7F	MC10115L	——	1,16	8
7G	MC10131L, HD10131	——	1,16	8
7H	MC10101L, HD10101	——	1,16	8
7J	MC10101L, HD10101	——	1,16	8
7K	MC10101L, HD10101	——	1,16	8
7L	MC10101L, HD10101	——	1,16	8
IC 8A	MC10101L, HD10101	——	1,16	8
8B	MC10101L, HD10101	——	1,16	8
8C	MC10101L, HD10101	——	1,16	8
8D	MC10101L, HD10101	——	1,16	8
	MC10162L	——	1,16	8
8E	MC10176L	——	1,16	8
8G	MC10131L, HD10131	——	1,16	8
8H	MC10136L	——	1,16	8
8J	MC10101L, HD10101	——	1,16	8
8K	MC10101L, HD10101	——	1,16	8
IC 9A	MC10101L, HD10101	——	1,16	8
9B	MC10101L, HD10101	——	1,16	8
9C	MC10101L, HD10101	——	1,16	8
9D	MC10101L, HD10101	——	1,16	8
9E	MC10101L, HD10101	——	1,16	8
9G	MC10116L, HD10116	——	1,16	8
9H	MC10116L, HD10116	——	1,16	8
9J	MC10101L, HD10101	——	1,16	8
9K	MC10101L, HD10101	——	1,16	8
9L	MC10101L, HD10101	——	1,16	8

LMY-3(1/4) BOARD
1-613-956-11
HDIE-100 (S) 10,101 ~
HDIE-100 (N) 10,101 ~

LMY-3 BOARD



IC1A
IC1B
IC1C
IC1G
IC1J
IC1K
IC1L
IC2A
IC2B
IC2C
IC2E
IC2F
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IC2J
IC2K
IC2L
IC2M
IC2N
IC3A
IC3B
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IC19G
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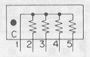
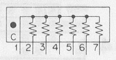
IC19L
IC19M

LED1	1L
SW1	1L
SW2	1M
TP1	1M
TP2	4H
TP3	8L
TP4	3D
TP5	9L
TPE1	1N
TPE2	8L
TPE3	7D
TPE4	15D
TPE5	16J
TPE6	4A
TPE7	4M
TPE8	15M
TPE9	15A

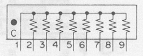
RB1~6, 8~13, 16, 17, 18, 22, 23, 26~29, 31, 34, 35, 37, 40, 41, 43~48, 50, 52~68, 70, 72, 74, 75, 77, 78, 79, 81, 82, 84, 87, 89, 90, 91, 94~97, 100~103, 106, 108, 109, 111~114, 116~120, 123~126, 129, 131, 132, 136, 137, 142, 146, 148, 150~162, 164~171, 174, 175, 177, 179, 181, 182, 184, 186, 187, 188, 190~195, 199, 200, 201, 203, 205, 208



RB7, 21, 24, 25, 32, 33, 36, 38, 39, 42, 49, 69, 73, 76, 80, 83, 85, 86, 92, 98, 99, 104, 105, 107, 110, 115, 121, 122, 127, 128, 130, 133, 134, 135, 138~141, 143, 144, 145, 147, 149, 172, 173, 178, 180, 183, 185, 189, 196, 197



RB14, 15, 19, 20, 30, 51, 71, 88, 93, 163, 176, 198, 202, 204, 206



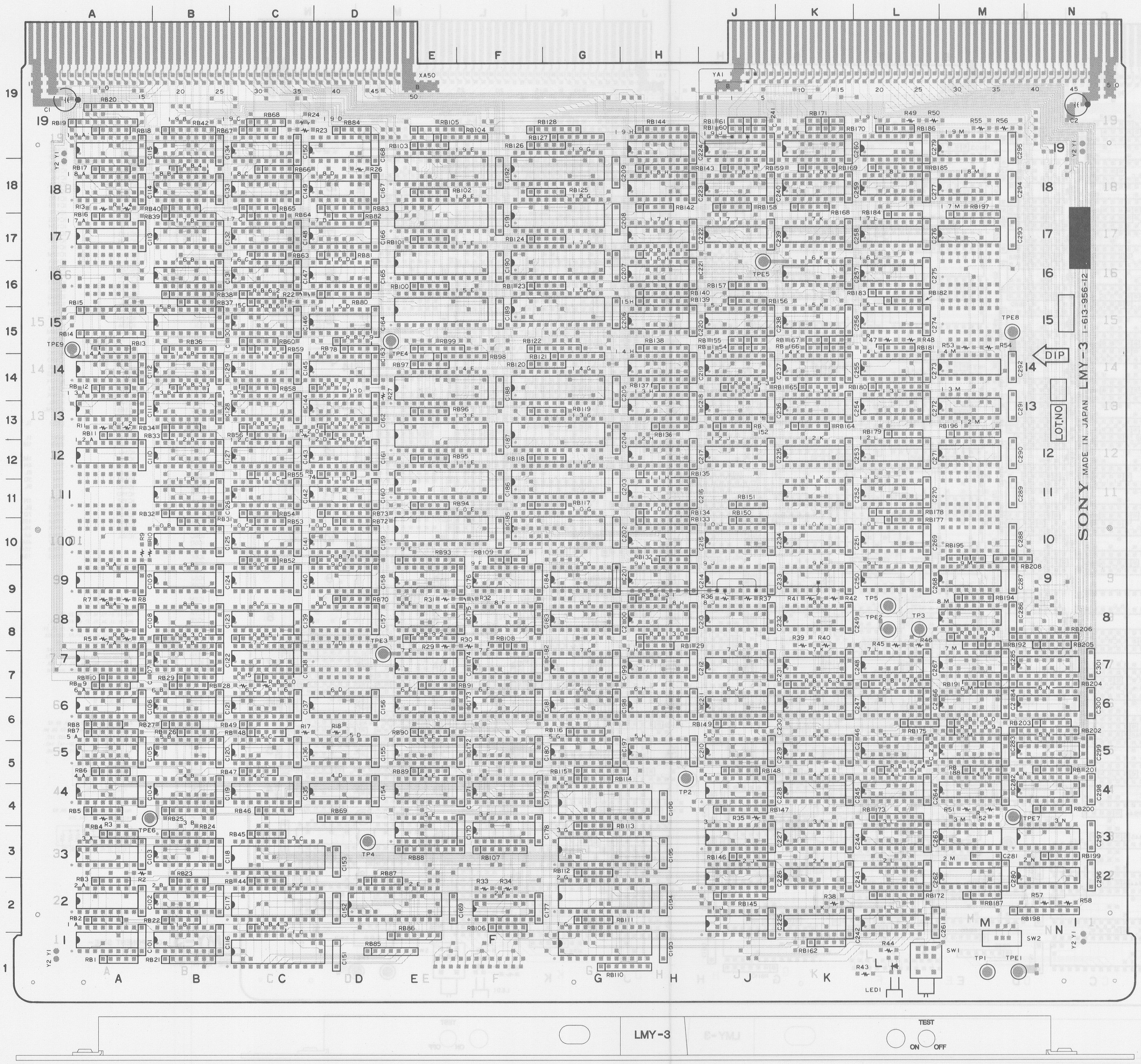
LMY-3 -COMPONENT SIDE-

1-613-956-12

HDIE-100 (S) 10101~

HDIE-100 (N) 10101~

LMY-3 BOARD



LMY-3 -COMPONENT SIDE-
1-613-956-12
HDIE-100 (S) 10101~
HDIE-100 (N) 10101~

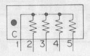
IC1A, IC1B, IC1C, IC1G, IC1J, IC1K, IC1L, IC2A, IC2B, IC2C, IC2E, IC2F, IC2G, IC2J, IC2K, IC2L, IC2M, IC2N, IC3A, IC3B, IC3C, IC3E, IC3F, IC3G, IC3J, IC3K, IC3L, IC3M, IC3N, IC4A, IC4B, IC4C, IC4D, IC4E, IC4F, IC4G, IC4J, IC4K, IC4L, IC4M, IC4N, IC5A, IC5B, IC5C, IC5D, IC5E, IC5F, IC5G, IC5H, IC5J, IC5K, IC5L, IC5M, IC5N, IC6A, IC6B, IC6C, IC6D, IC6E, IC6F, IC6G, IC6H, IC6J, IC6K, IC6L, IC6M, IC6N, IC7A, IC7B, IC7C, IC7E, IC7F, IC7G, IC7H, IC7J, IC7K, IC7L, IC7M, IC7N, IC8A, IC8B, IC8C, IC8D, IC8E, IC8F, IC8G, IC8H, IC8J, IC8K, IC8M, IC9A, IC9B, IC9C, IC9D, IC9E, IC9F, IC9G, IC9H, IC9J, IC9K, IC9L, IC9M

IC10B, IC10C, IC10D, IC10E, IC10G, IC10H, IC10J, IC10K, IC10L, IC11B, IC11C, IC11D, IC11E, IC11G, IC11H, IC11K, IC11L, IC12A, IC12B, IC12C, IC12D, IC12H, IC12J, IC12K, IC12L, IC12M, IC13A, IC13B, IC13C, IC13D, IC13E, IC13G, IC13H, IC13J, IC13K, IC13L, IC13M, IC14A, IC14B, IC14C, IC14D, IC14E, IC14G, IC14H, IC14J, IC14K, IC14L, IC14M, IC15B, IC15C, IC15D, IC15E, IC15G, IC15H, IC15J, IC15K, IC15L

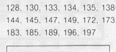
IC16B, IC16C, IC16D, IC16H, IC16K, IC16L, IC17A, IC17B, IC17C, IC17D, IC17E, IC17G, IC17H, IC17J, IC17K, IC17L, IC17M, IC18A, IC18B, IC18C, IC18D, IC18E, IC18G, IC18H, IC18J, IC18K, IC18L, IC18M, IC19A, IC19B, IC19C, IC19D, IC19E, IC19G, IC19H, IC19J, IC19K, IC19L, IC19M

LED1	1L
SW1	1L
SW2	1M
TP1	1M
TP2	4H
TP3	8L
TP4	3D
TP5	9L
TPE1	1N
TPE2	8L
TPE3	7D
TPE4	15D
TPE5	16J
TPE6	4A
TPE7	4M
TPE8	15M
TPE9	15A

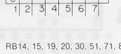
RB1~6, 8~13, 16, 17, 18, 22, 23, 26~29, 31, 34, 35, 37, 40, 41, 43~48, 50, 52~68, 70, 72, 74, 75, 77, 78, 79, 81, 82, 84, 87, 89, 90, 91, 94~97, 100~103, 106, 108, 109, 111~114, 116~120, 123~126, 129, 131, 132, 136, 137, 142, 146, 148, 150~162, 164~171, 174, 175, 177, 179, 181, 182, 184, 186, 187, 188, 190~195, 199, 200, 201, 203, 205, 208



RB7, 21, 24, 25, 32, 33, 36, 38, 39, 42, 49, 69, 73, 76, 80, 83, 85, 86, 92, 98, 99, 104, 105, 107, 110, 115, 121, 122, 127, 128, 130, 133, 134, 135, 138~141, 143, 144, 145, 147, 149, 172, 173, 178, 180, 183, 185, 189, 196, 197

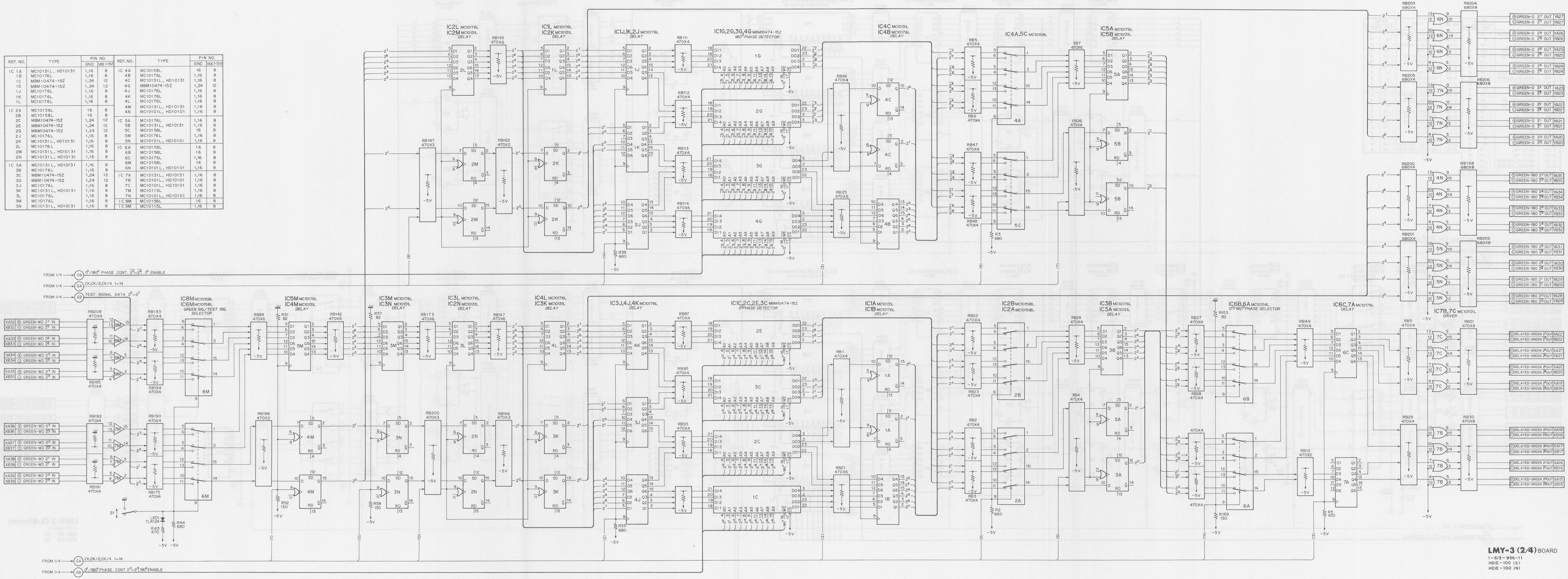


RB14, 15, 19, 20, 30, 51, 71, 88, 93, 163, 176, 198, 202, 204, 206



LMY-3 BOARD (2/4); GREEN CHANNEL 1H-DELAY LINE

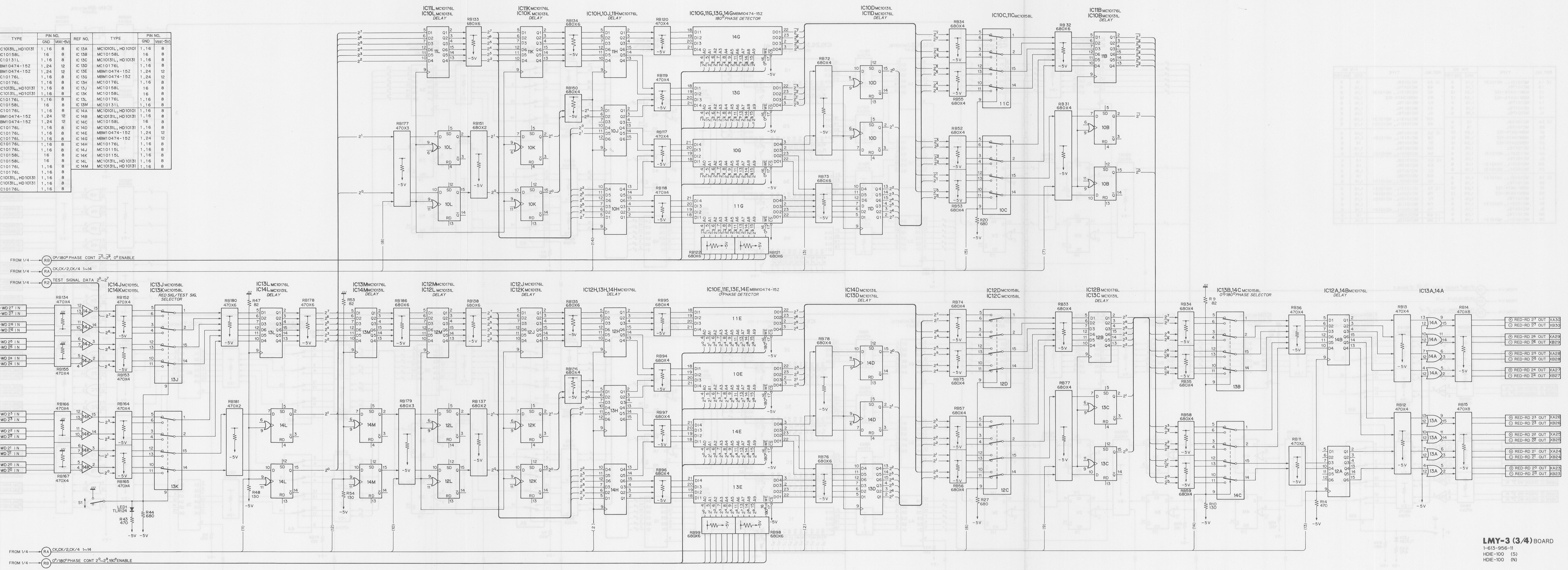
REF. NO.	TYPE	PIN NO. GND	PIN NO. VEE (-5V)	REF. NO.	TYPE	PIN NO. GND	PIN NO. VEE (-5V)
IC 1A	MC10131L, HD10131	1,16	8	IC 4A	MC10158L	16	8
1B	MC10176L	1,16	8	4B	MC10176L	1,16	8
1C	MBM10474-15Z	1,24	12	4C	MC10131L, HD10131	1,16	8
1G	MBM10474-15Z	1,24	12	4G	MBM10474-15Z	1,24	12
1J	MC10176L	1,16	8	4J	MC10176L	1,16	8
1K	MC10176L	1,16	8	4K	MC10176L	1,16	8
1L	MC10176L	1,16	8	4L	MC10176L	1,16	8
IC 2A	MC10158L	16	8	4M	MC10131L, HD10131	1,16	8
2B	MC10158L	16	8	4N	MC10101L, HD10101	1,16	8
2C	MBM10474-15Z	1,24	12	IC 5A	MC10176L	1,16	8
2E	MBM10474-15Z	1,24	12	5B	MC10131L, HD10131	1,16	8
2G	MBM10474-15Z	1,24	12	5C	MC10158L	16	8
2J	MC10176L	1,16	8	5M	MC10176L	1,16	8
2K	MC10131L, HD10131	1,16	8	5N	MC10101L, HD10101	1,16	8
2L	MC10176L	1,16	8	IC 6A	MC10158L	16	8
2M	MC10131L, HD10131	1,16	8	6B	MC10158L	16	8
2N	MC10131L, HD10131	1,16	8	6C	MC10176L	1,16	8
IC 3A	MC10131L, HD10131	1,16	8	6M	MC10158L	16	8
3B	MC10176L	1,16	8	6N	MC10101L, HD10101	1,16	8
3C	MBM10474-15Z	1,24	12	IC 7A	MC10131L, HD10131	1,16	8
3G	MBM10474-15Z	1,24	12	7B	MC10101L, HD10101	1,16	8
3J	MC10176L	1,16	8	7C	MC10101L, HD10101	1,16	8
3K	MC10131L, HD10131	1,16	8	7M	MC10115L	1,16	8
3L	MC10176L	1,16	8	7N	MC10101L, HD10101	1,16	8
3M	MC10176L	1,16	8	IC 8M	MC10158L	16	8
3N	MC10131L, HD10131	1,16	8	IC 9M	MC10115L	1,16	8



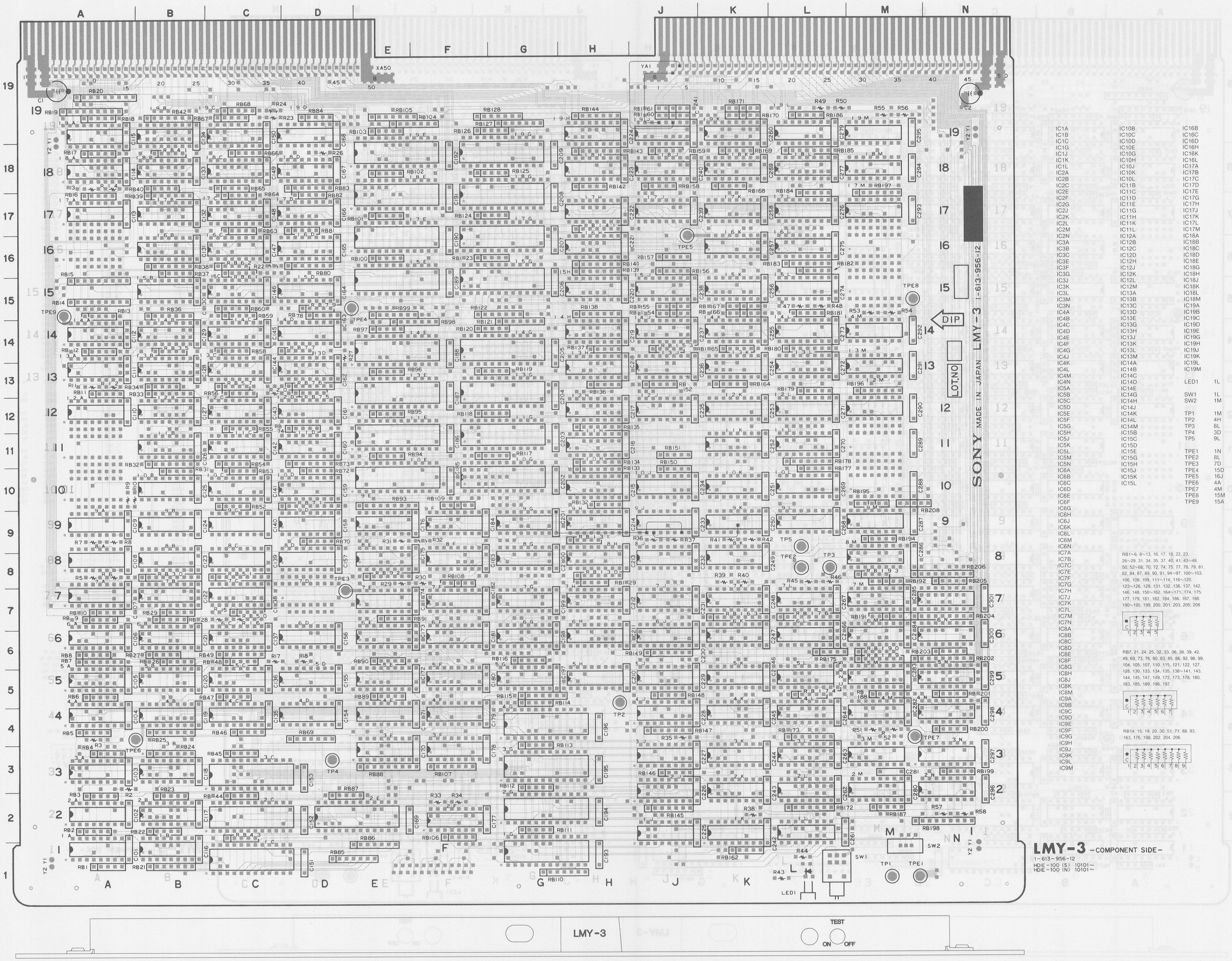
LMY-3 BOARD (3/4); RED CHANNEL 1H-DELAY LINE

REF NO.	TYPE	PIN NO. GND	PIN NO. VEE(-5V)
IC 10B	MC10131L, HD10131	1, 16	8
IC 10C	MC10158L	16	8
IC 10D	MC10131L	1, 16	8
IC 10E	MBM10474-15Z	1, 24	12
IC 10G	MBM10474-15Z	1, 24	12
IC 10H	MC10176L	1, 16	8
IC 10J	MC10176L	1, 16	8
IC 10K	MC10131L, HD10131	1, 16	8
IC 10L	MC10131L, HD10131	1, 16	8
IC 11B	MC10176L	1, 16	8
IC 11C	MC10158L	16	8
IC 11D	MC10176L	1, 16	8
IC 11E	MBM10474-15Z	1, 24	12
IC 11G	MBM10474-15Z	1, 24	12
IC 11H	MC10176L	1, 16	8
IC 11K	MC10176L	1, 16	8
IC 11L	MC10176L	1, 16	8
IC 12A	MC10176L	1, 16	8
IC 12B	MC10176L	1, 16	8
IC 12C	MC10158L	16	8
IC 12D	MC10158L	16	8
IC 12H	MC10176L	1, 16	8
IC 12J	MC10176L	1, 16	8
IC 12K	MC10131L, HD10131	1, 16	8
IC 12L	MC10131L, HD10131	1, 16	8
IC 12M	MC10176L	1, 16	8

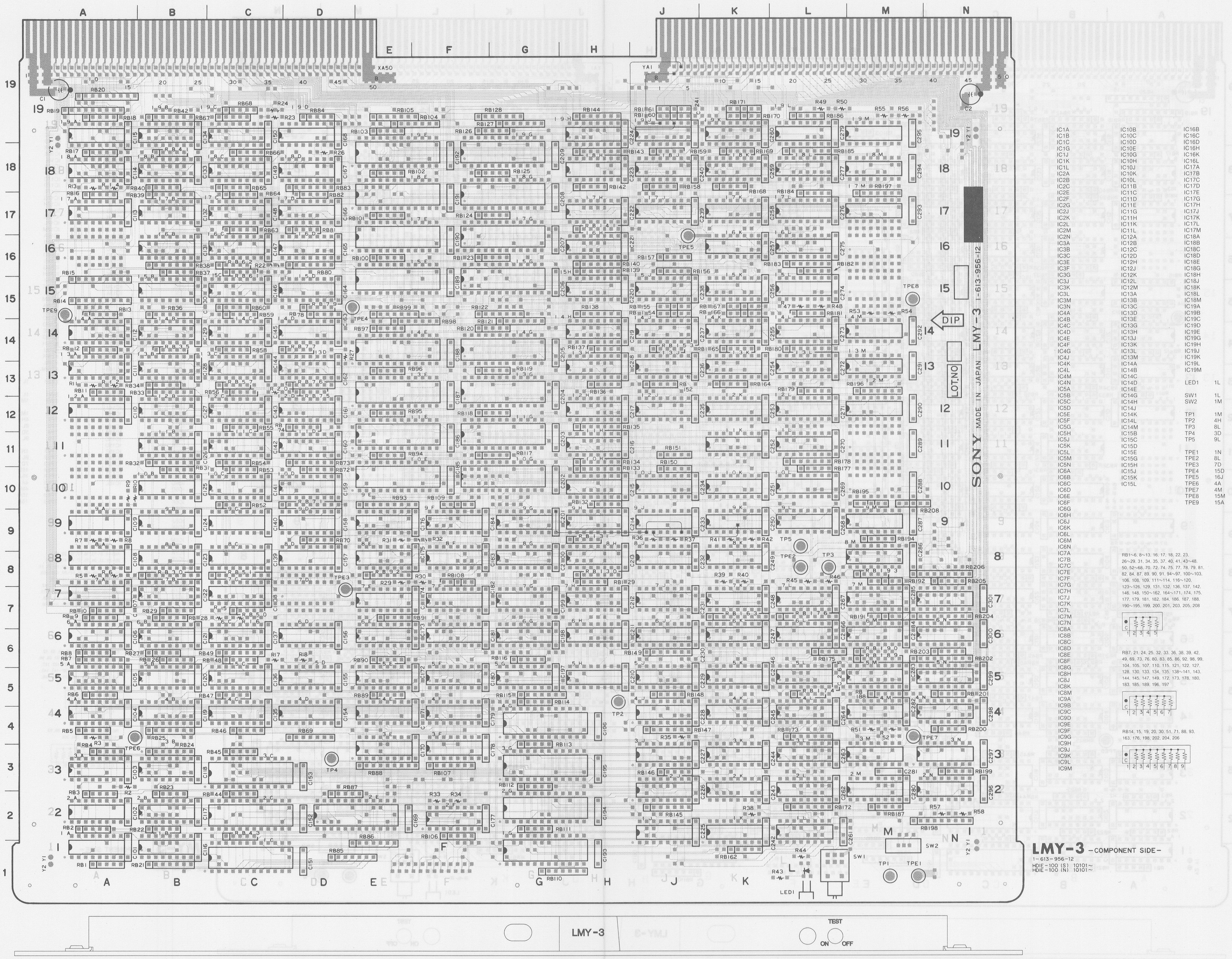
REF NO.	TYPE	PIN NO. GND	PIN NO. VEE(-5V)
IC 13A	MC10101L, HD10101	1, 16	8
IC 13B	MC10158L	16	8
IC 13C	MC10131L, HD10131	1, 16	8
IC 13D	MC10176L	1, 16	8
IC 13E	MBM10474-15Z	1, 24	12
IC 13G	MBM10474-15Z	1, 24	12
IC 13H	MC10176L	1, 16	8
IC 13J	MC10158L	16	8
IC 13K	MC10158L	16	8
IC 13L	MC10176L	1, 16	8
IC 13M	MC10131L	1, 16	8
IC 14A	MC10101L, HD10101	1, 16	8
IC 14B	MC10131L, HD10131	1, 16	8
IC 14C	MC10158L	16	8
IC 14D	MC10131L, HD10131	1, 16	8
IC 14E	MBM10474-15Z	1, 24	12
IC 14G	MBM10474-15Z	1, 24	12
IC 14H	MC10176L	1, 16	8
IC 14J	MC10115L	1, 16	8
IC 14K	MC10115L	1, 16	8
IC 14L	MC10131L, HD10131	1, 16	8
IC 14M	MC10131L, HD10131	1, 16	8



LMY-3 BOARD


LMY-3 -COMPONENT SIDE-
1-613-956-12
SONY
MADE IN JAPAN
LOT.NO
DIP
TEST
ON
OFF

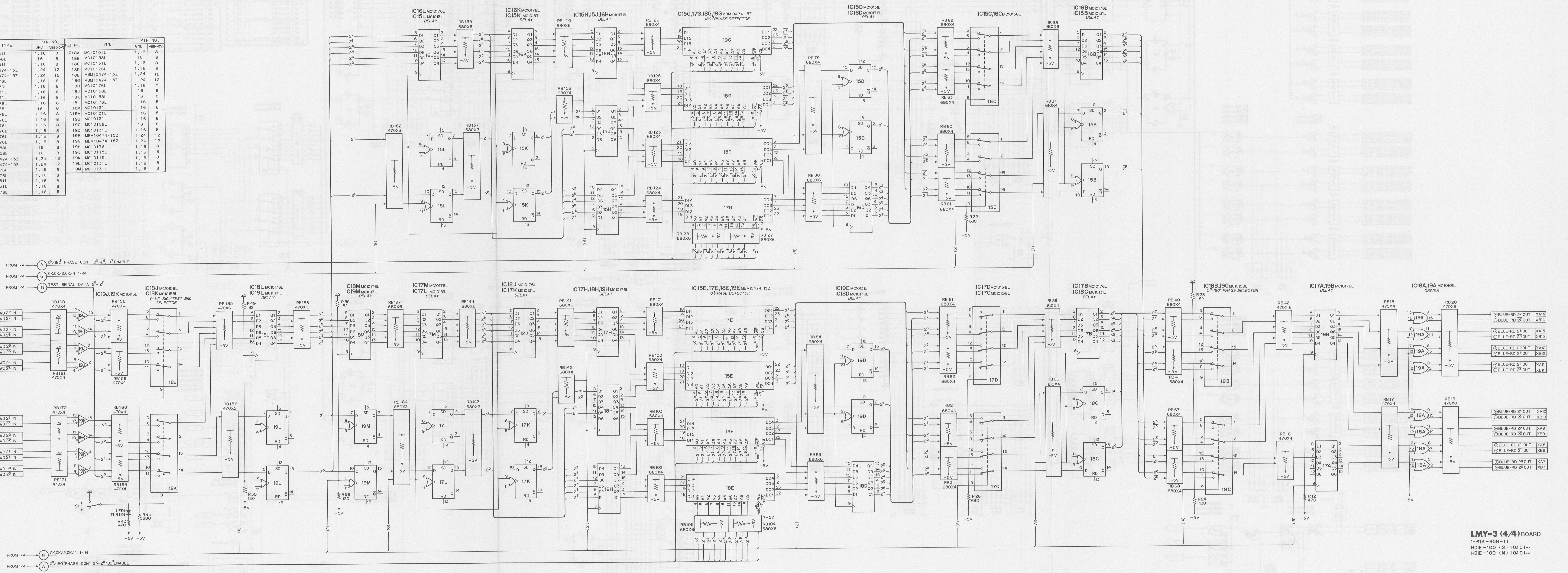
LMY-3 BOARD


SONY
1-613-956-12
LMY-3
MADE IN JAPAN
DIP
LOT NO
LMY-3 -COMPONENT SIDE-
TEST
ON OFF

LMY-3 BOARD (4/4); BLUE CHANNEL 1H-DELAY LINE

REF NO.	TYPE	PIN NO. GND	PIN NO. VEE(-5V)
IC15B	MC10131L	1,16	8
15C	MC10158L	16	8
15D	MC10131L	1,16	8
15E	MBM10474-15Z	1,24	12
15G	MBM10474-15Z	1,24	12
15H	MC10176L	1,16	8
15J	MC10176L	1,16	8
15K	MC10131L	1,16	8
15L	MC10131L	1,16	8
IC16B	MC10176L	1,16	8
16C	MC10158L	16	8
16D	MC10176L	1,16	8
16H	MC10176L	1,16	8
16K	MC10176L	1,16	8
16L	MC10176L	1,16	8
IC17A	MC10176L	1,16	8
17B	MC10176L	1,16	8
17C	MC10158L	16	8
17D	MC10158L	16	8
17E	MBM10474-15Z	1,24	12
17G	MBM10474-15Z	1,24	12
17H	MC10176L	1,16	8
17J	MC10176L	1,16	8
17K	MC10131L	1,16	8
17L	MC10131L	1,16	8
17M	MC10176L	1,16	8

REF NO.	TYPE	PIN NO. GND	PIN NO. VEE(-5V)
IC18A	MC10101L	1,16	8
18B	MC10158L	16	8
18C	MC10131L	1,16	8
18D	MC10176L	1,16	8
18E	MBM10474-15Z	1,24	12
18G	MBM10474-15Z	1,24	12
18H	MC10176L	1,16	8
18J	MC10158L	16	8
18K	MC10158L	16	8
18L	MC10176L	1,16	8
18M	MC10131L	1,16	8
IC19A	MC10101L	1,16	8
19B	MC10131L	1,16	8
19C	MC10158L	16	8
19D	MC10131L	1,16	8
19E	MBM10474-15Z	1,24	12
19G	MBM10474-15Z	1,24	12
19H	MC10176L	1,16	8
19J	MC10115L	1,16	8
19K	MC10115L	1,16	8
19L	MC10131L	1,16	8
19M	MC10131L	1,16	8



LMY-3 (4/4) BOARD
1-613-956-11
HDIE-100 (S) 10,101~
HDIE-100 (N) 10,101~

BKG-2 (1/3)   BKG-2 (1/3)

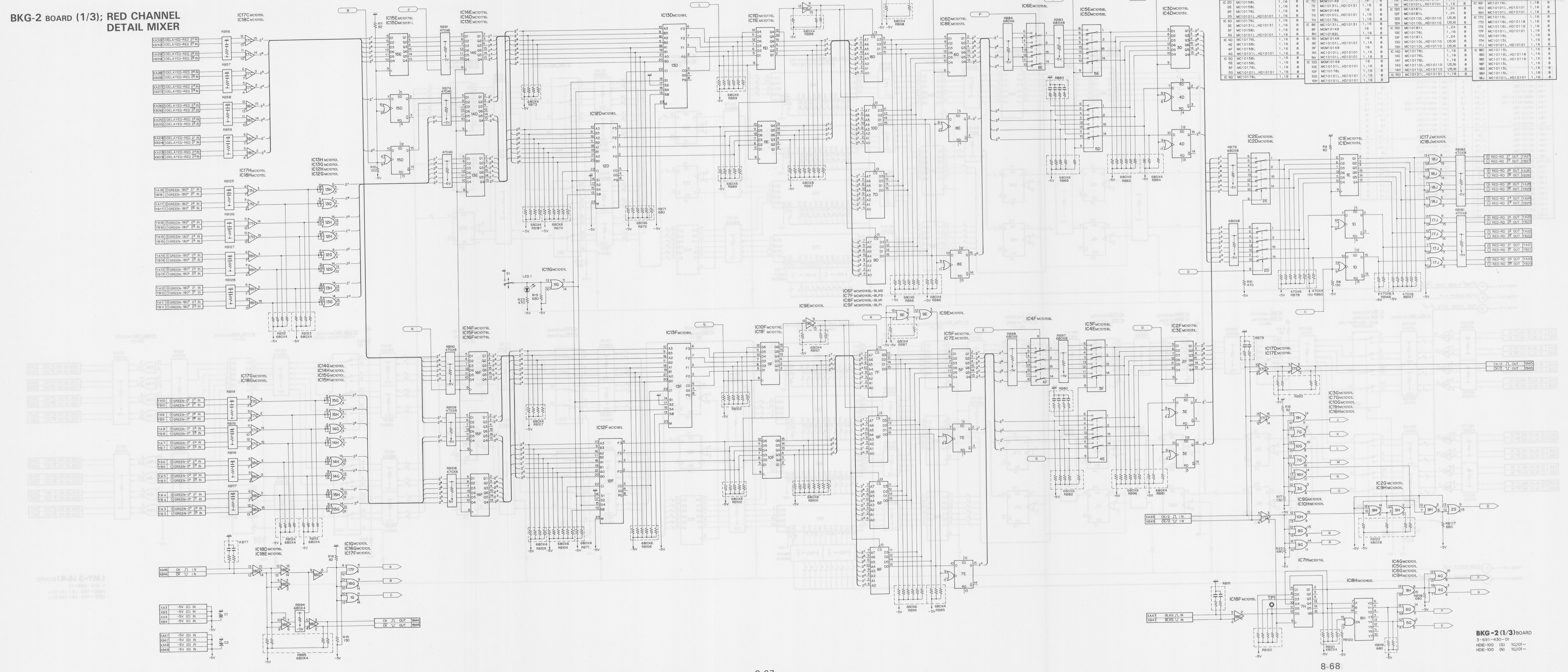
BKG-2 BOARD (1/3); RED CHANNEL DETAIL MIXER

REF NO.	TYPE	PIN NO. GND	PIN NO. VEE(-5V)
IC 1D	MC10131L, HD10131	1, 16	8
1E	MC10176L	1, 16	8
1G	MC10101L, HD10101	1, 16	8
IC 2D	MC10158L	1, 16	8
2E	MC10158L	1, 16	8
2F	MC10176L	1, 16	8
2G	MC10101L, HD10101	1, 16	8
IC 3D	MC10176L	1, 16	8
3E	MC10131L, HD10131	1, 16	8
3F	MC10158L	1, 16	8
3G	MC10101L, HD10101	1, 16	8
IC 4D	MC10176L	1, 16	8
4E	MC10158L	1, 16	8
4F	MC10158L	1, 16	8
4G	MC10101L, HD10101	1, 16	8
IC 5D	MC10158L	1, 16	8
5E	MC10158L	1, 16	8
5F	MC10176L	1, 16	8
5G	MC10101L, HD10101	1, 16	8
IC 6D	MC10176L	1, 16	8

REF NO.	TYPE	PIN NO. GND	PIN NO. VEE(-5V)
IC 6E	MC10158L	1, 16	8
6F	MCM10149	16	8
6G	MC10101L, HD10101	1, 16	8
IC 7D	MCM10149	16	8
7E	MC10131L, HD10131	1, 16	8
7F	MCM10149	16	8
7G	MC10101L, HD10101	1, 16	8
7H	MC10176L	1, 16	8
IC 8E	MC10131L, HD10131	1, 16	8
8F	MCM10149	16	8
8H	MC10162L	1, 16	8
IC 9D	MCM10149	16	8
9E	MC10101L, HD10101	1, 16	8
9F	MCM10149	16	8
9G	MC10101L, HD10101	1, 16	8
9H	MC10101L, HD10101	1, 16	8
IC 10D	MCM10149	16	8
10E	MC10101L, HD10101	1, 16	8
10F	MC10176L	1, 16	8
10G	MC10101L, HD10101	1, 16	8
10H	MC10101L, HD10101	1, 16	8

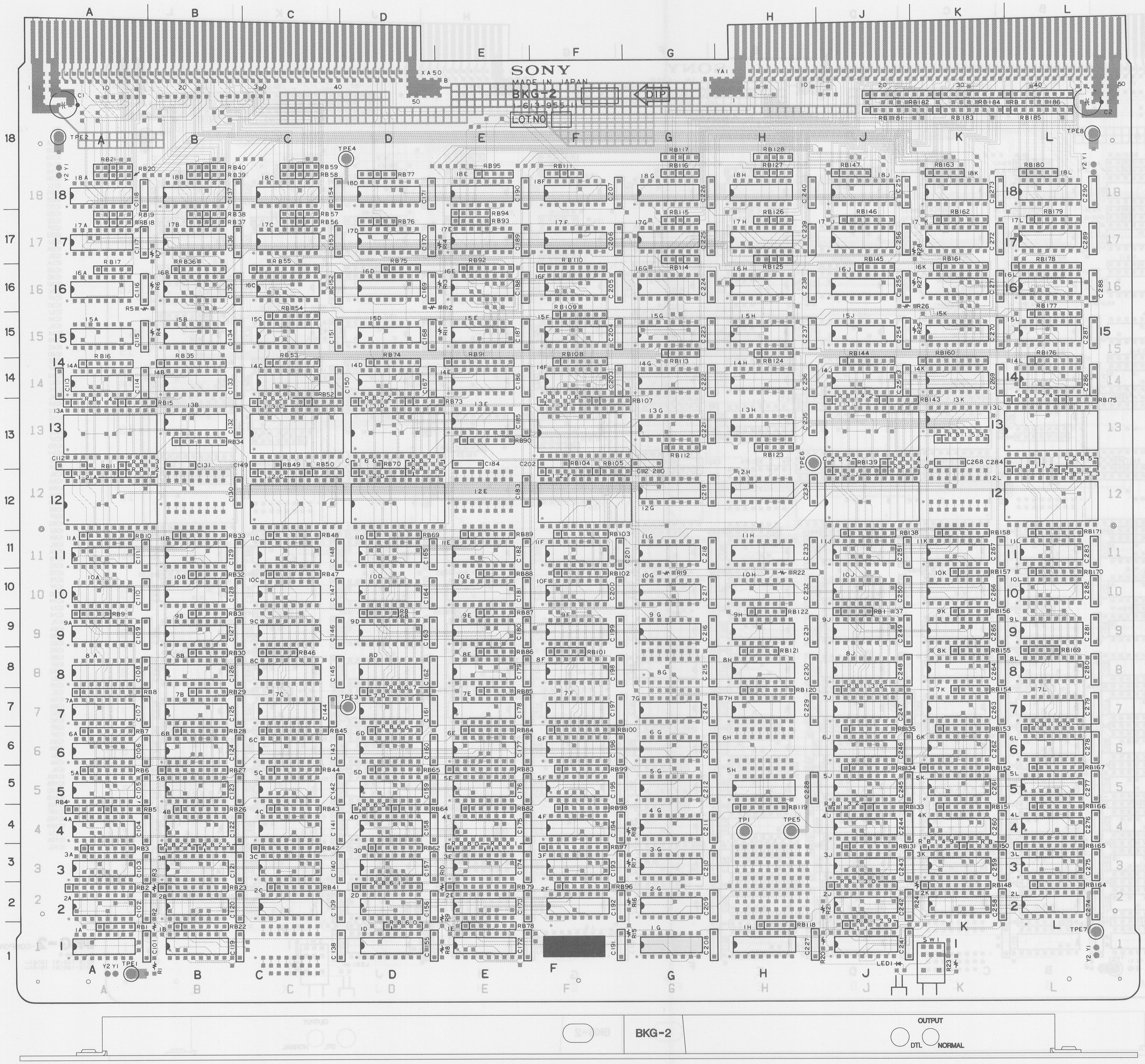
REF NO.	TYPE	PIN NO. GND	PIN NO. VEE(-5V)
IC 10D	MC10176L	1, 16	8
11E	MC10176L	1, 16	8
11F	MC10176L	1, 16	8
11G	MC10101L, HD10101	1, 16	8
11H	MC10101L, HD10101	1, 16	8
IC 12D	MC10181L	1, 24	8
12F	MC10181L	1, 24	8
12G	MC10110L, HD10110	1,15,16	8
12H	MC10110L, HD10110	1,15,16	8
IC 13D	MC10181L	1, 24	8
13E	MC10176L	1, 16	8
13F	MC10181L	1, 24	8
13G	MC10110L, HD10110	1,15,16	8
13H	MC10110L, HD10110	1,15,16	8
IC 14D	MC10176L	1, 16	8
14E	MC10176L	1, 16	8
14F	MC10176L	1, 16	8
14G	MC10110L, HD10110	1,15,16	8
14H	MC10110L, HD10110	1,15,16	8
IC 15D	MC10131L, HD10131	1, 16	8

REF NO.	TYPE	PIN NO. GND	PIN NO. VEE(-5V)
IC 15E	MC10176L	1, 16	8
15F	MC10176L	1, 16	8
15G	MC10110L, HD10110	1,15,16	8
15H	MC10110L, HD10110	1,15,16	8
IC 16F	MC10176L	1, 16	8
16G	MC10101L, HD10101	1, 16	8
16H	MC10101L, HD10101	1, 16	8
IC 17C	MC10115L	1, 16	8
17D	MC10116L, HD10116	1, 16	8
17E	MC10116L, HD10116	1, 16	8
17F	MC10101L, HD10101	1, 16	8
17G	MC10115L	1, 16	8
17H	MC10115L	1, 16	8
17J	MC10101L, HD10101	1, 16	8
IC 18C	MC10115L	1, 16	8
18D	MC10116L, HD10116	1, 16	8
18E	MC10116L, HD10116	1, 16	8
18F	MC10115L	1, 16	8
18G	MC10115L	1, 16	8
18H	MC10115L	1, 16	8
18J	MC10101L, HD10101	1, 16	8



BKG-2 (1/3) BOARD
3-691-430-01
HDIE-100 (S) 10,101~
HDIE-100 (N) 10,101~

BKG-2 BOARD



BKG-2 -COMPONENT SIDE-
1-613-955-11
HD1E-100(S) 10101~
HD1E-100(N) 10101~

D1	1J

IC1A, IC1B, IC1D, IC1E, IC1G, IC1H, IC1J, IC2A, IC2B, IC2C, IC2D, IC2E, IC2F, IC2G, IC2J, IC2K, IC2L, IC3A, IC3B, IC3C, IC3D, IC3E, IC3F, IC3G, IC3J, IC3K, IC3L, IC4A, IC4B, IC4C, IC4D, IC4E, IC4F, IC4G, IC4J, IC4K, IC4L, IC5A, IC5B, IC5C, IC5D, IC5E, IC5F, IC5G, IC5H, IC5J, IC5K, IC5L, IC6A, IC6B, IC6C, IC6D, IC6E, IC6F, IC6G, IC6J, IC6K, IC6L, IC7A, IC7B, IC7C, IC7D, IC7E, IC7F, IC7G, IC7H, IC7J, IC7K, IC7L, IC8A, IC8B, IC8C, IC8D, IC8E, IC8F, IC8G, IC8J, IC8K, IC8L, IC9A, IC9B, IC9C, IC9D, IC9E, IC9F, IC9G, IC9H, IC9J, IC9K, IC9L, IC10A, IC10B, IC10C, IC10D, IC10E, IC10F, IC10G, IC10H, IC10J, IC10K, IC10L

IC11A, IC11B, IC11C, IC11D, IC11E, IC11F, IC11G, IC11H, IC11J, IC11K, IC11L, IC12A, IC12C, IC12D, IC12F, IC12G, IC12H, IC12J, IC12L, IC13A, IC13B, IC13C, IC13D, IC13E, IC13F, IC13G, IC13H, IC13J, IC13K, IC13L, IC14A, IC14B, IC14C, IC14D, IC14E, IC14F, IC14G, IC14H, IC14J, IC14K, IC14L, IC15A, IC15B, IC15C, IC15D, IC15E, IC15F, IC15G, IC15H, IC15J, IC15K, IC15L

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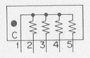
S1	1K
TP1	4H
TPE1	1A
TPE2	18A
TPE3	7D
TPE4	18D
TPE5	4H
TPE6	13H
TPE7	1L
TPE8	18L

RB1, 4, 5, 9, 12, 13, 15, 17~21, 24, 25, 29~32, 37~40, 46, 50, 52, 56~60, 63, 64, 68, 71, 73, 75, 76, 77, 80, 81, 85~88, 93, 94, 95, 101, 105, 107, 111~118, 121~128, 132, 133, 137, 140, 141, 143, 145, 147, 149, 150, 154~157, 163, 169, 173, 175, 180



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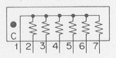

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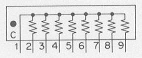
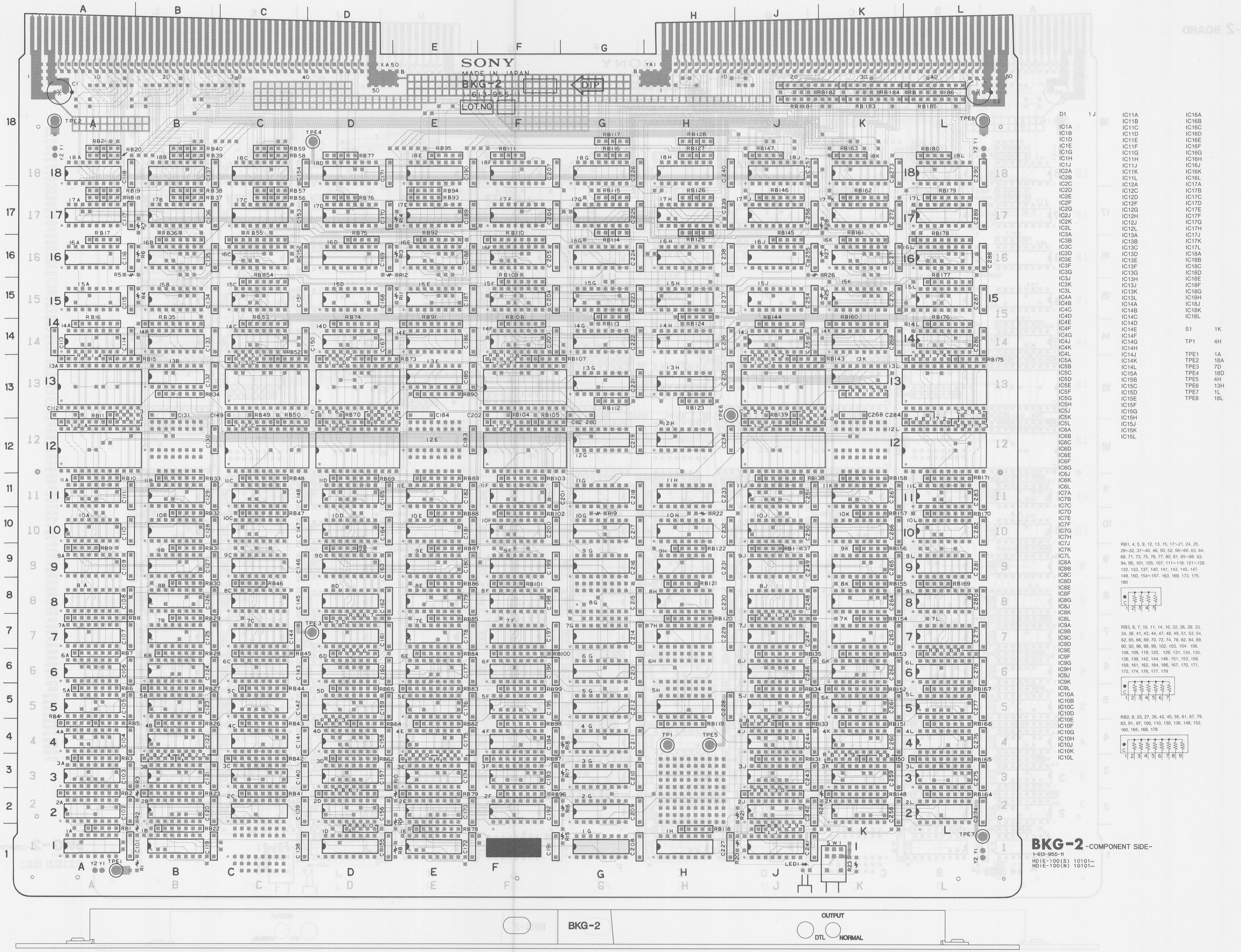
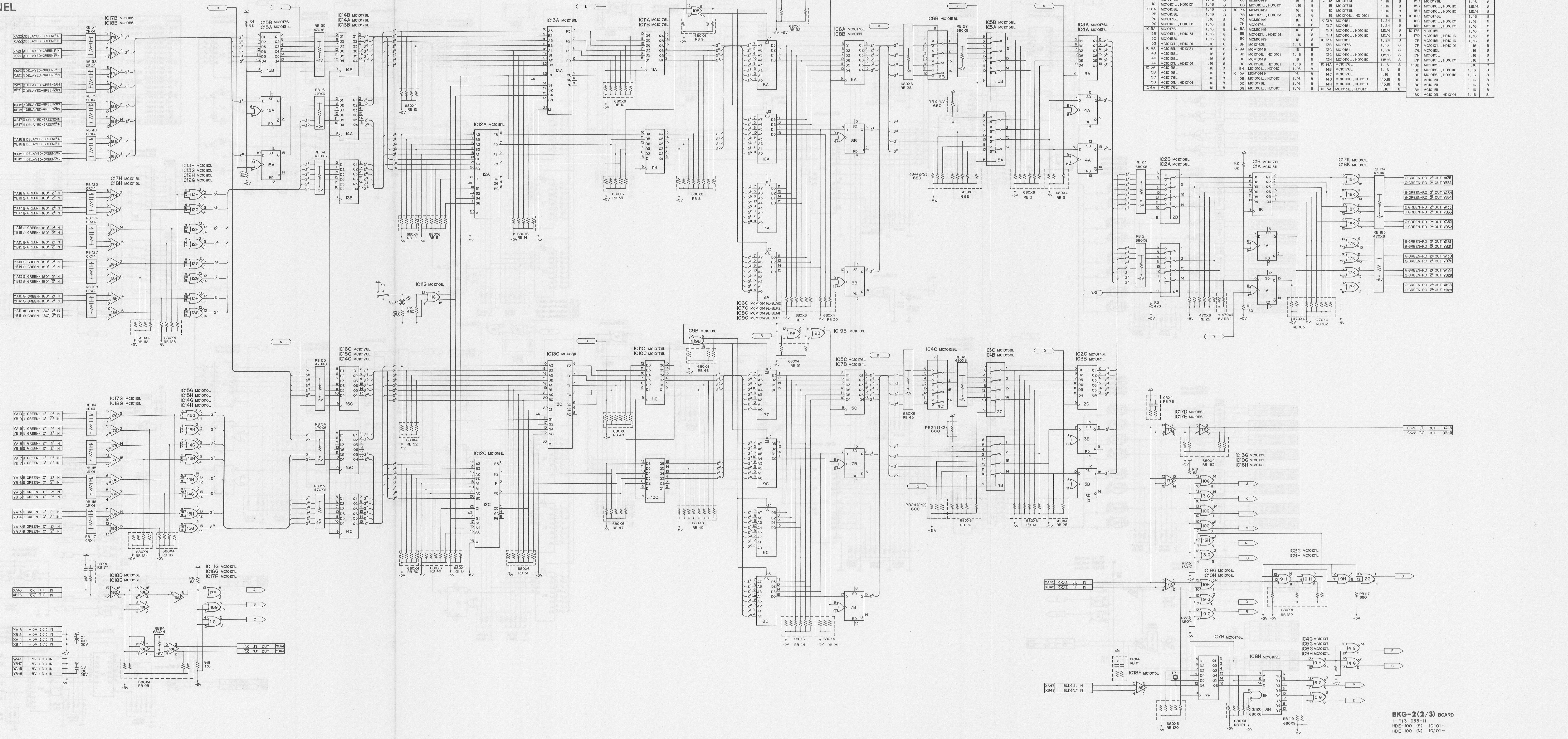


BKG-2 BOARD


SONY
MADE IN JAPAN
BKG-2
1-613-955-
LOT NO
DIP
BKG-2 -COMPONENT SIDE-
1-613-955-11
HDIE-100(S) 10101~
HDIE-100(N) 10101~
BKG-2
OUTPUT
DTL
NORMAL

BKG-2 BOARD (2/3); GREEN CHANNEL DETAIL MIXER

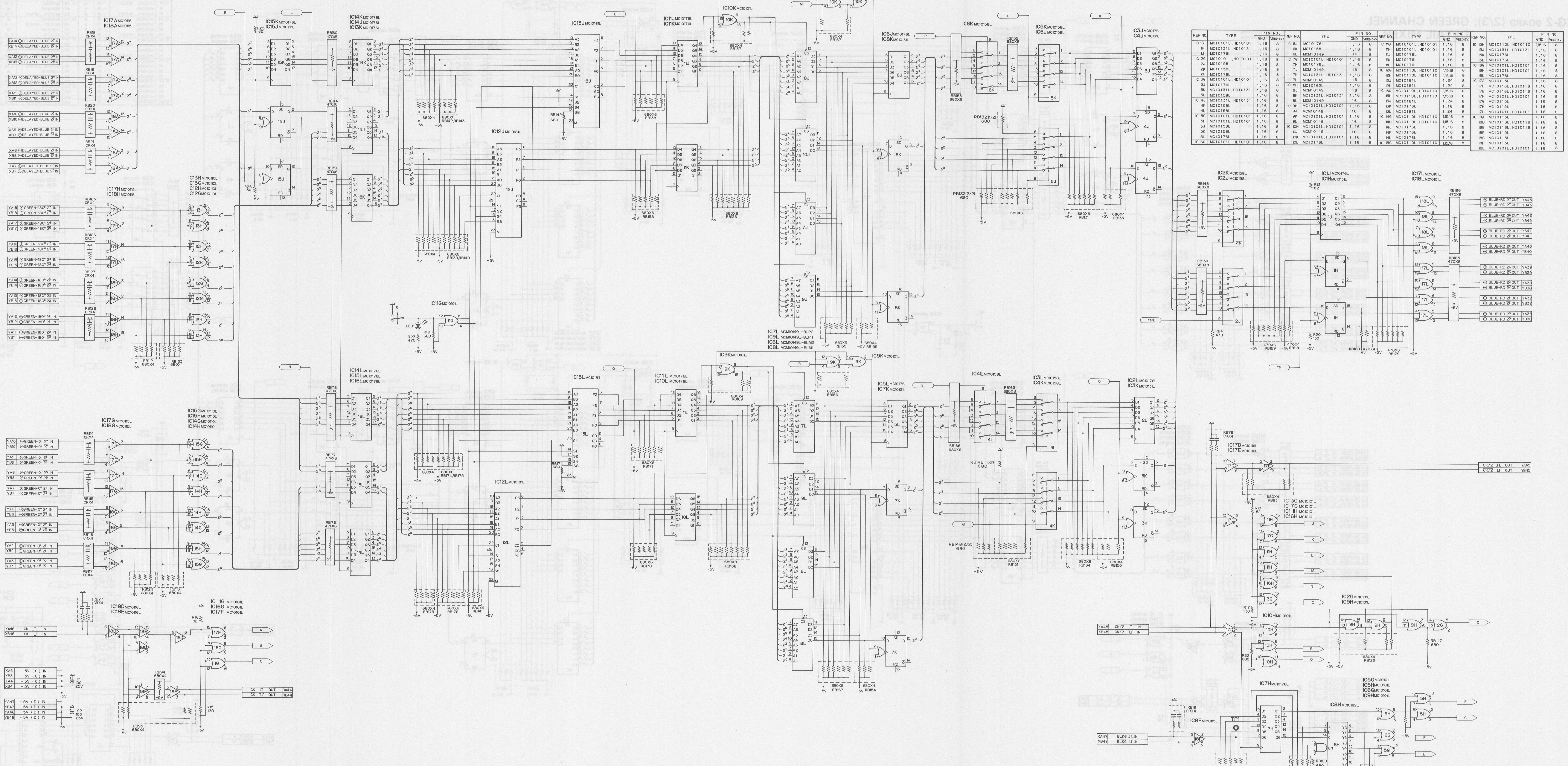


REF NO.	TYPE	PIN NO. GND	PIN NO. VEE(-5V)
IC 1A	MC10131L , HD10131	1.16	8
1B	MC10176L	1.16	8
1G	MC10101L , HD10101	1.16	8
IC 2A	MC10158L	1.16	8
2B	MC10158L	1.16	8
2C	MC10176L	1.16	8
2G	MC10101L , HD10101	1.16	8
IC 3A	MC10176L	1.16	8
3B	MC10131L , HD10131	1.16	8
3C	MC10158L	1.16	8
3G	MC10101L , HD10101	1.16	8
IC 4A	MC10131L , HD10131	1.16	8
4B	MC10158L	1.16	8
4C	MC10158L	1.16	8
4G	MC10101L , HD10101	1.16	8
IC 5A	MC10158L	1.16	8
5B	MC10158L	1.16	8
5C	MC10176L	1.16	8
5G	MC10101L , HD10101	1.16	8
IC 6A	MC10176L	1.16	8
IC 6B	MC10158L	1.16	8
6C	MCM10149	16	8
6G	MC10101L , HD10101	1.16	8
IC 7A	MCM10149	16	8
7B	MC10131L , HD10131	1.16	8
7C	MCM10149	16	8
7H	MC10176L	1.16	8
IC 8A	MCM10149	16	8
8B	MC10131L , HD10131	1.16	8
8C	MCM10149	16	8
8H	MC10162L	1.16	8
IC 9A	MCM10149	16	8
9B	MC10101L , HD10101	1.16	8
9C	MCM10149	16	8
9G	MC10101L , HD10101	1.16	8
9H	MC10101L , HD10101	1.16	8
IC 10A	MCM10149	16	8
10B	MC10101L , HD10101	1.16	8
10C	MC10176L	1.16	8
10G	MC10101L , HD10101	1.16	8
IC 10H	MC10101L , HD10101	1.16	8
IC 11A	MC10176L	1.16	8
11B	MC10176L	1.16	8
11C	MC10176L	1.16	8
11G	MC10101L , HD10101	1.16	8
IC 12A	MC10181L	1.24	8
12C	MC10181L	1.24	8
12G	MC10110L , HD10110	1.15.16	8
12H	MC10110L , HD10110	1.15.16	8
IC 13A	MC10181L	1.24	8
13B	MC10176L	1.16	8
13C	MC10181L	1.24	8
13G	MC10110L , HD10110	1.15.16	8
13H	MC10110L , HD10110	1.15.16	8
IC 14A	MC10176L	1.16	8
14B	MC10176L	1.16	8
14C	MC10176L	1.16	8
14G	MC10110L , HD10110	1.15.16	8
14H	MC10110L , HD10110	1.15.16	8
IC 15A	MC10131L , HD10131	1.16	8
IC 15B	MC10176L	1.16	8
15C	MC10176L	1.16	8
15G	MC10110L , HD10110	1.15.16	8
15H	MC10110L , HD10110	1.15.16	8
IC 16C	MC10176L	1.16	8
16G	MC10101L , HD10101	1.16	8
16H	MC10101L , HD10101	1.16	8
IC 17B	MC10115L	1.16	8
17D	MC10116L , HD10116	1.16	8
17E	MC10116L , HD10116	1.16	8
17F	MC10101L , HD10101	1.16	8
17G	MC10115L	1.16	8
17H	MC10115L	1.16	8
17K	MC10101L , HD10101	1.16	8
IC 18B	MC10115L	1.16	8
18D	MC10116L , HD10116	1.16	8
18E	MC10116L , HD10116	1.16	8
18F	MC10115L	1.16	8
18G	MC10115L	1.16	8
18H	MC10115L	1.16	8
18K	MC10101L , HD10101	1.16	8

BKG-2(2/3) BOARD
1-613-955-11
HDIE-100 (S) 10,101~
HDIE-100 (N) 10,101~

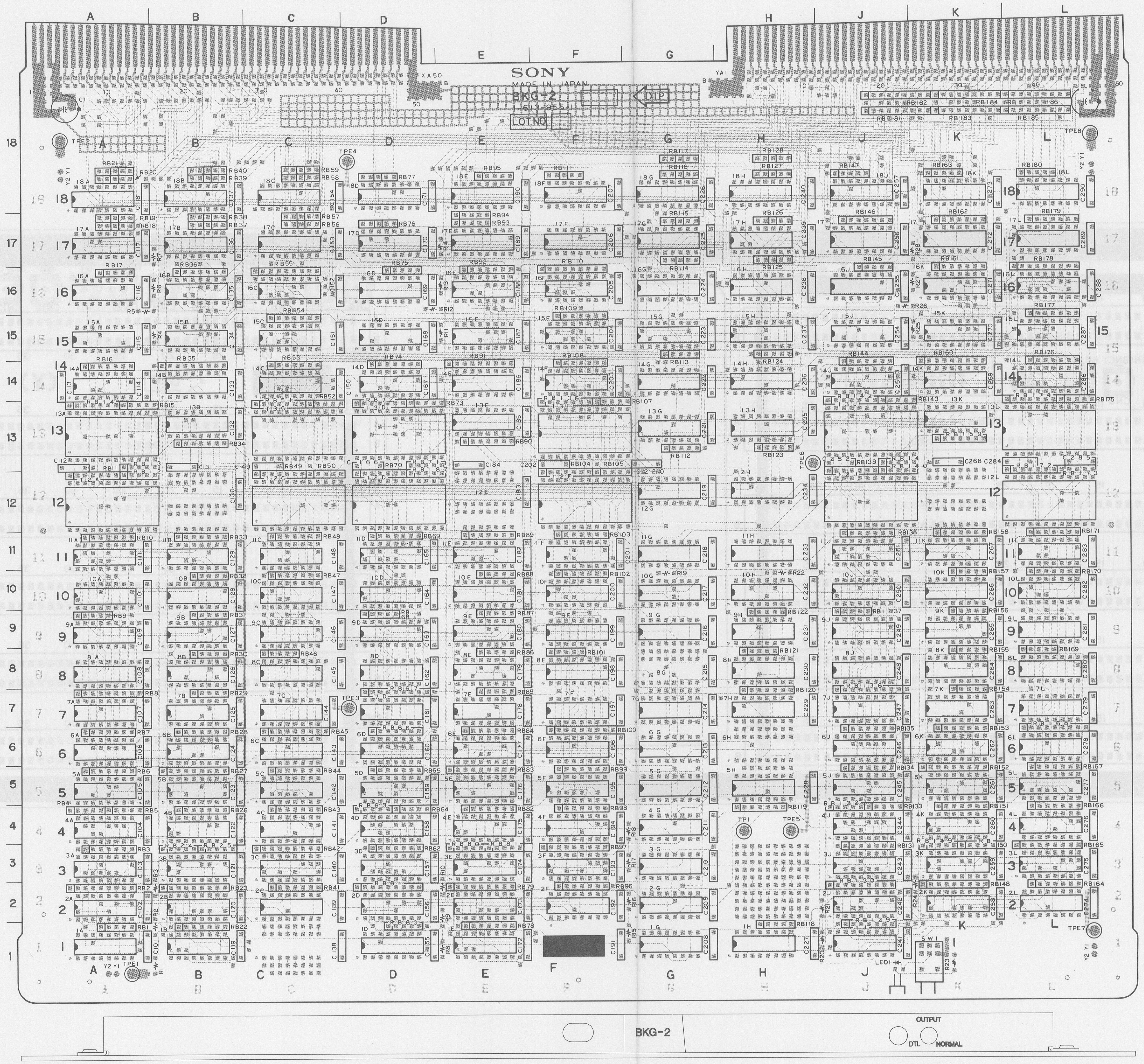
BKG-2 BOARD (3/3); BLUE CHANNEL DETAIL MIXER

REF NO.	TYPE	PIN NO. GND	PIN NO. VEE(-5V)	REF NO.	TYPE	PIN NO. GND	PIN NO. VEE(-5V)	REF NO.	TYPE	PIN NO. GND	PIN NO. VEE(-5V)	REF NO.	TYPE	PIN NO. GND	PIN NO. VEE(-5V)
IC 1G	MC10101L, HD10101	1, 16	8	IC 6J	MC10176L	1, 16	8	IC 11G	MC10101L, HD10101	1, 16	8	IC 15H	MC10110L, HD10110	1,15,16	8
1H	MC10131L, HD10131	1, 16	8	6K	MC10158L	1, 16	8	11H	MC10101L, HD10101	1, 16	8	15J	MC10131L, HD10131	1, 16	8
1J	MC10176L	1, 16	8	6L	MCM10149	16	8	11J	MC10176L	1, 16	8	15K	MC10176L	1, 16	8
IC 2G	MC10101L, HD10101	1, 16	8	IC 7G	MC10101L, HD10101	1, 16	8	11K	MC10176L	1, 16	8	15L	MC10176L	1, 16	8
2J	MC10158L	1, 16	8	7H	MC10176L	1, 16	8	11L	MC10176L	1, 16	8	IC 16G	MC10101L, HD10101	1, 16	8
2K	MC10158L	1, 16	8	7J	MCM10149	16	8	IC 12G	MC10110L, HD10110	1,15,16	8	16H	MC10101L, HD10101	1, 16	8
2L	MC10176L	1, 16	8	7K	MC10131L, HD10131	1, 16	8	12H	MC10110L, HD10110	1,15,16	8	16L	MC10176L	1, 16	8
IC 3G	MC10101L, HD10101	1, 16	8	7L	MCM10149	16	8	12J	MC10181L	1, 24	8	IC 17A	MC10115L	1, 16	8
3J	MC10176L	1, 16	8	IC 8H	MC10162L	1, 16	8	12L	MC10181L	1, 24	8	17D	MC10116L, HD10116	1, 16	8
3K	MC10131L, HD10131	1, 16	8	8J	MCM10149	16	8	IC 13G	MC10110L, HD10110	1,15,16	8	17E	MC10116L, HD10116	1, 16	8
3L	MC10158L	1, 16	8	8K	MC10131L, HD10131	1, 16	8	13H	MC10110L, HD10110	1,15,16	8	17F	MC10101L, HD10101	1, 16	8
IC 4J	MC10131L, HD10131	1, 16	8	8L	MCM10149	16	8	13J	MC10181L	1, 24	8	17G	MC10115L	1, 16	8
4K	MC10158L	1, 16	8	IC 9H	MC10101L, HD10101	1, 16	8	13K	MC10176L	1, 16	8	17H	MC10115L	1, 16	8
4L	MC10158L	1, 16	8	9J	MCM10149	16	8	13L	MC10181L	1, 24	8	17L	MC10101L, HD10101	1, 16	8
IC 5G	MC10101L, HD10101	1, 16	8	9K	MC10101L, HD10101	1, 16	8	IC 14G	MC10110L, HD10110	1,15,16	8	IC 18A	MC10115L	1, 16	8
5H	MC10101L, HD10101	1, 16	8	9L	MCM10149	16	8	14H	MC10110L, HD10110	1,15,16	8	18D	MC10116L, HD10116	1, 16	8
5J	MC10158L	1, 16	8	IC 10H	MC10101L, HD10101	1, 16	8	14J	MC10176L	1, 16	8	18E	MC10116L, HD10116	1, 16	8
5K	MC10158L	1, 16	8	10J	MCM10149	16	8	14K	MC10176L	1, 16	8	18F	MC10115L	1, 16	8
5L	MC10176L	1, 16	8	10K	MC10101L, HD10101	1, 16	8	14L	MC10176L	1, 16	8	18G	MC10115L	1, 16	8
IC 6G	MC10101L, HD10101	1, 16	8	10L	MC10176L	1, 16	8	IC 15G	MC10110L, HD10110	1,15,16	8	18H	MC10115L	1, 16	8
												18L	MC10101L, HD10101	1, 16	8



BKG-2 (3/3) BOARD
1-613-955-11
HDIE-100 (S) 10,101~
HDIE-100 (N) 10,101~

BKG-2 BOARD



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IC1B	
IC1D	
IC1E	
IC1G	
IC1H	
IC1J	
IC2A	
IC2B	
IC2C	
IC2D	
IC2E	
IC2F	
IC2G	
IC2J	
IC2K	
IC2L	
IC3A	
IC3B	
IC3C	
IC3D	
IC3E	
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IC4B	
IC4C	
IC4D	
IC4E	
IC4F	
IC4G	
IC4J	
IC4K	
IC4L	
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IC5B	
IC5C	
IC5D	
IC5E	
IC5F	
IC5G	
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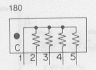
IC18D	
IC18E	
IC18F	
IC18G	
IC18H	
IC18J	
IC18K	
IC18L	
S1	1K
TP1	4H
TPE1	1A
TPE2	18A
TPE3	7D
TPE4	18D
TPE5	4H
TPE6	13H
TPE7	1L
TPE8	18L

RB1, 4, 5, 9, 12, 13, 15, 17~21, 24, 25, 29~32, 37~40, 46, 50, 52, 56~60, 63, 64, 68, 71, 73, 75, 76, 77, 80, 81, 85~88, 93, 94, 95, 101, 105, 107, 111~118, 121~128, 132, 133, 137, 140, 141, 143, 145, 147, 149, 150, 154~157, 163, 169, 173, 175, 180



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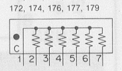
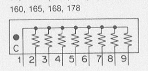
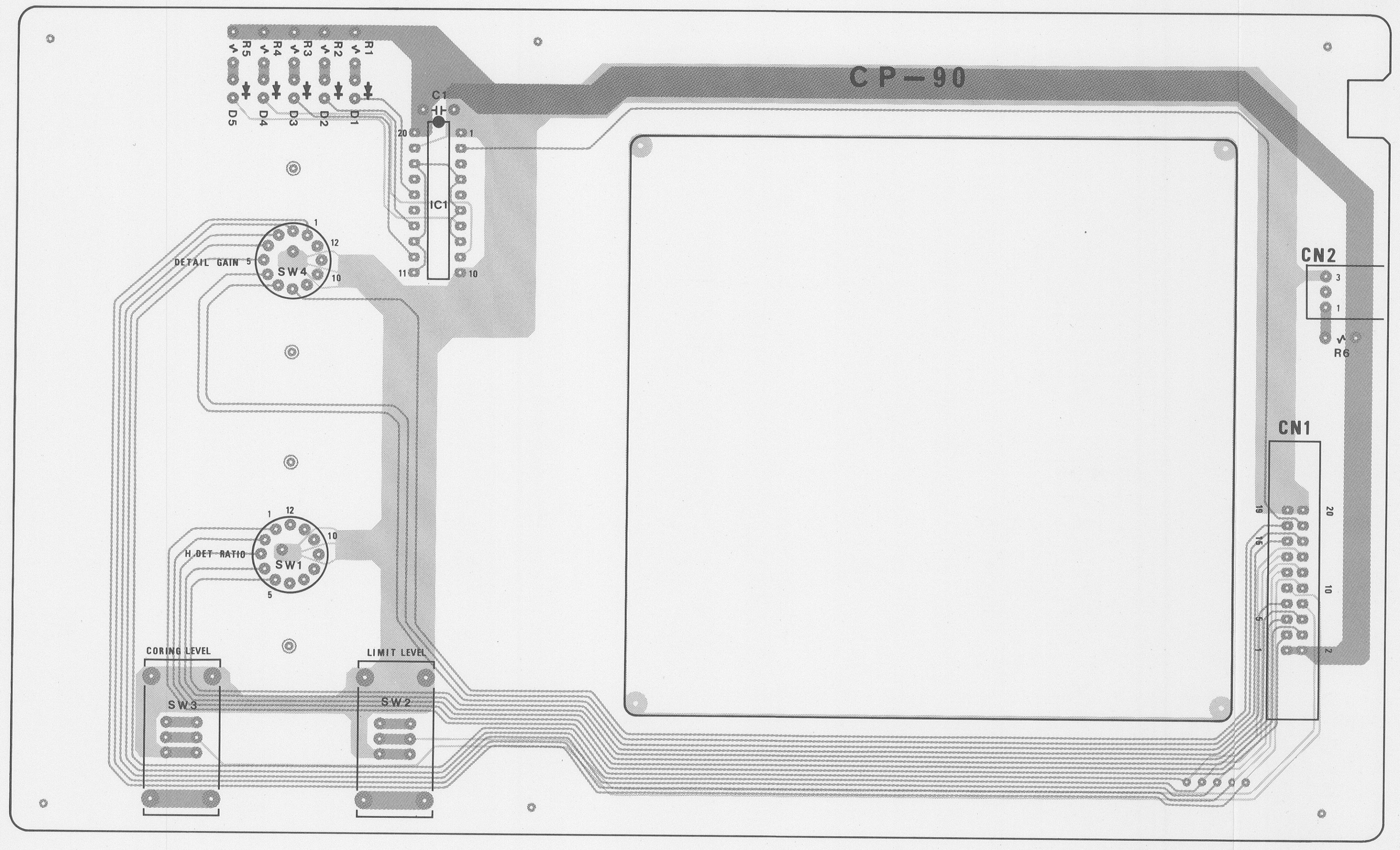


RB2, 8, 23, 27, 35, 42, 45, 55, 61, 67, 79, 83, 91, 97, 100, 110, 130, 136, 148, 152, 160, 165, 168, 178

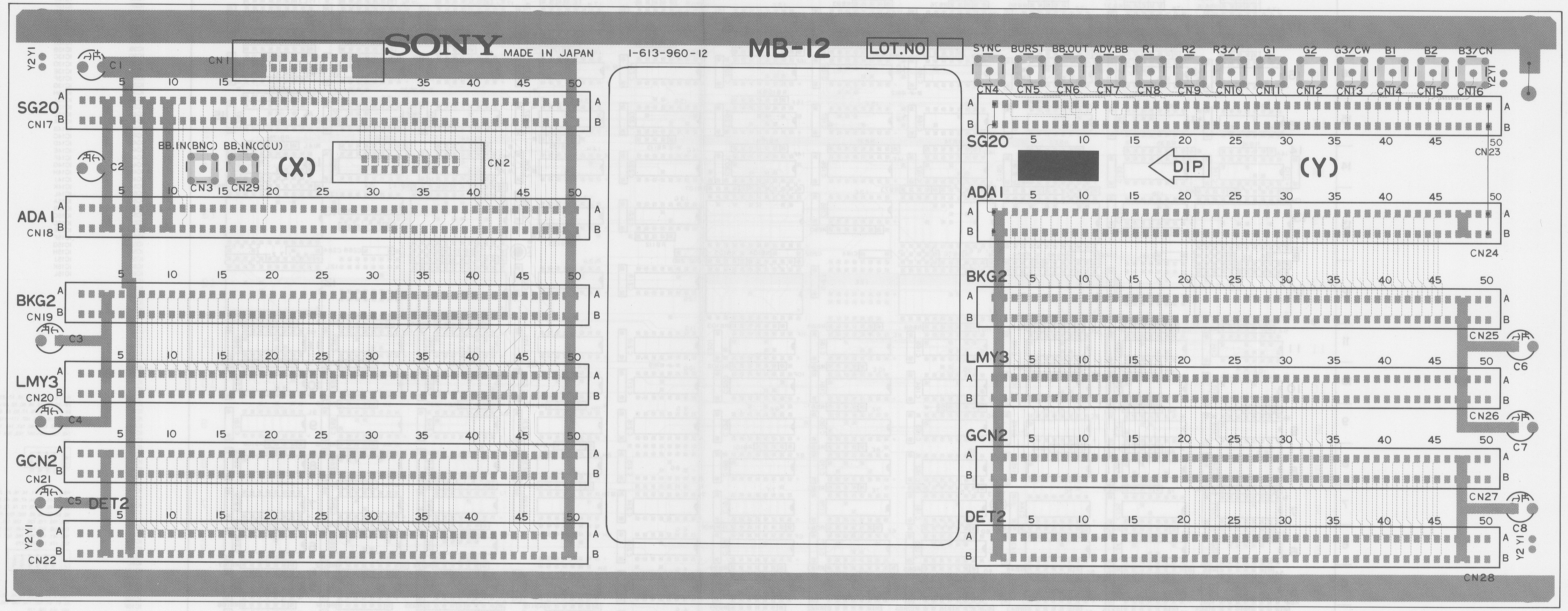


BKG-2 -COMPONENT SIDE-
1-613-955-11
HDIE-100(S) 10101~
HDIE-100(N) 10101~

CP-90 BOARD
MB-12 BOARD

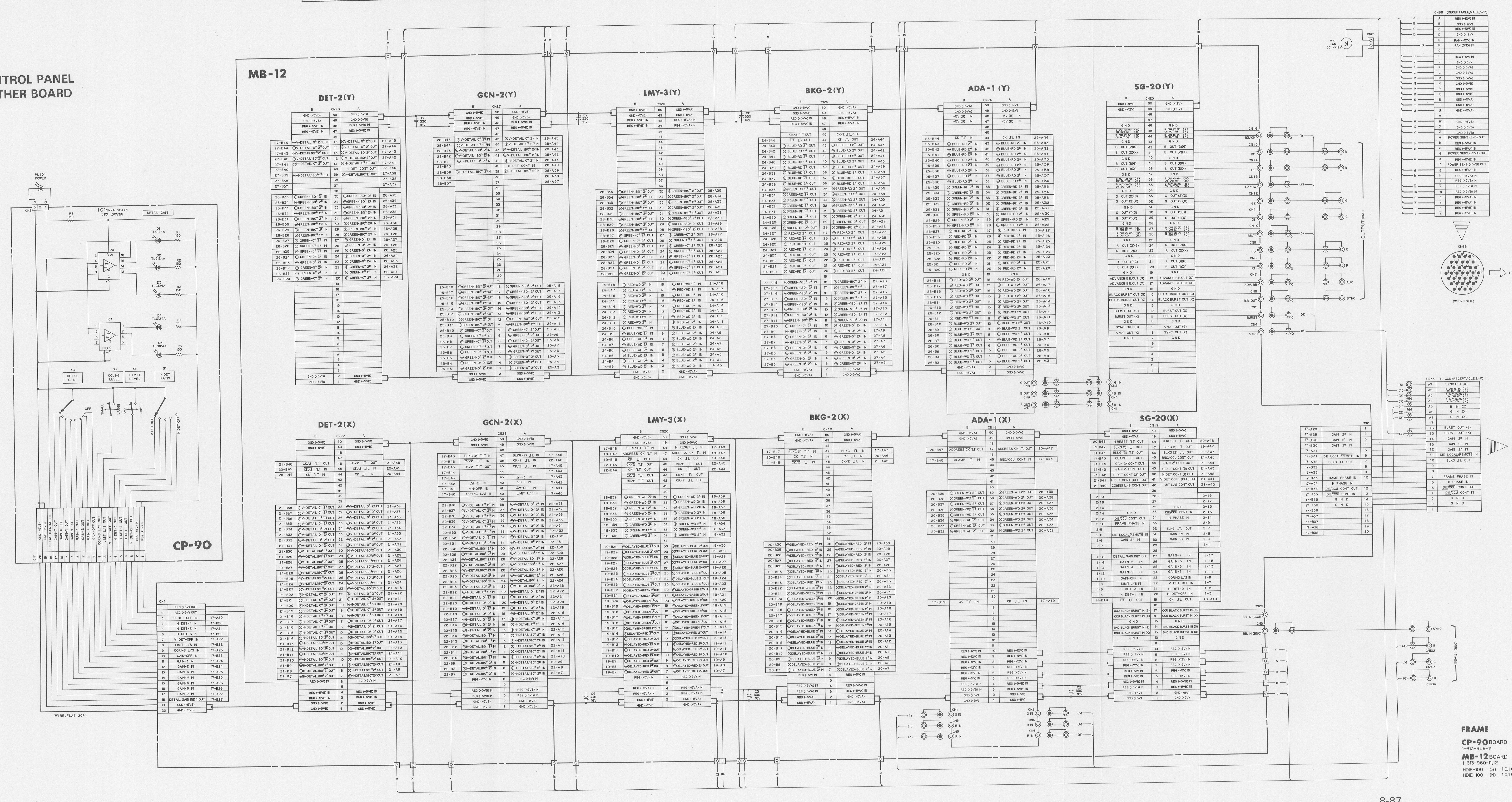


CP-90 -SOLDERING SIDE-
1-613-959-11
HDIE (S) 10,101~
HDIE (N) 10,101~



MB-12 -COMPONENT SIDE-
1-613-960-12
HDIE-100 (S) 10101~
HDIE-100 (N) 10101~

FRAME
CP-90 BOARD; CONTROL PANEL
MB-12 BOARD; MOTHER BOARD



FRAME
CP-90 BOARD
1-613-959-11
MB-12 BOARD
1-613-960-11,12
HDIE-100 (S) 10,101～
HDIE-100 (N) 10,101～

SECTION 9
SPARE PARTS

9-1. PARTS INFORMATION

補修用部品注意事項

(1) 安全重要部品

> 分解図，電気部品表中，⚠印及び▒▒で囲まれた部品は安全性を維持するために重要な部品である。従ってこれらの部品を交換するときには必ず指定の部品と交換すること。

(2) 部品の共通化

ソニーから供給される部品はセットに実装されているものと異なることがある。これは部品の共通化，改良等によるものである。

分解図や電気部品表には現時点での共通化された部品が記載されている。

(3) 部品の在庫

部品表中，( )で示されている部品は交換頻度が低い部品であるので在庫していないことがあり，納期が長くなることがある。

Notes on Repair Parts

(1) Safety Related Components Warning

> Components identified by shading marked with ⚠ on the exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose part numbers appear in this manual or in service bulletins and service manual supplements published by Sony.

(2) Standardization of Parts

Repair parts supplied from Sony Parts Center may not be always identical with the part which actually in use due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts".

This manual's exploded views and electrical spare parts list are indicating the parts numbers of "the standardized genuine parts at present".

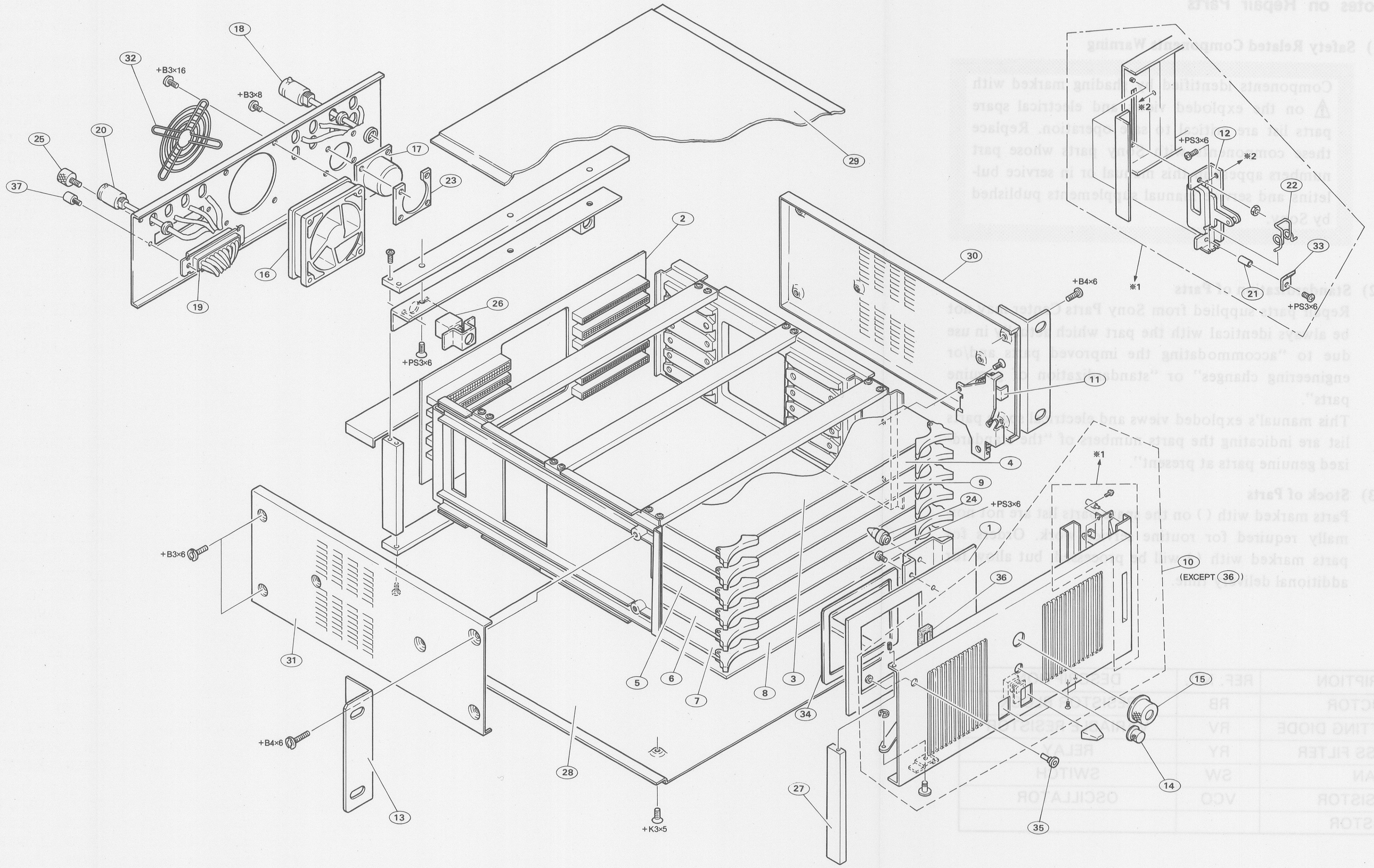
(3) Stock of Parts

Parts marked with ( ) on the spare parts list are not normally required for routine service work. Orders for parts marked with ( ) will be processed, but allow for additional delivery time.

ABBREVIATION

REF. NO.	DESCRIPTION	REF. NO.	DESCRIPTION	REF. NO.	DESCRIPTION
C	CAPACITOR	L	INDUCTOR	RB	RESISTOR BLOCK
CN	CONNECTOR	LED	LIGHT EMITTING DIODE	RV	VARIABLE RESISTOR
D	DIODE	LPF	LOW PASS FILTER	RY	RELAY
DL	DELAY LINE	M	FAN	SW	SWITCH
FB	FERRITE BEAD RING	Q	TRANSISTOR	VCO	OSCILLATOR
IC	IC	R	RESISTOR		

9-2. EXPLODED VIEW

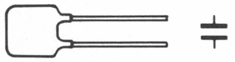


NO.		Part No.	Description
1	()	A-7512-107-A	MOUNTED CIRCUIT BOARD "CP-90"
2	()	A-7512-108-A	MOUNTED CIRCUIT BOARD "MB-12"
3	()	A-7513-109-A	MOUNTED CIRCUIT BOARD "SG-20S"
	()	A-7513-110-A	MOUNTED CIRCUIT BOARD "SG-20N"
4	()	A-7513-111-A	MOUNTED CIRCUIT BOARD "ADA-1"
5	()	A-7513-112-A	MOUNTED CIRCUIT BOARD "LMY-3"
6	()	A-7513-113-A	MOUNTED CIRCUIT BOARD "GCN-2"
7	()	A-7513-114-A	MOUNTED CIRCUIT BOARD "DET-2"
8	()	A-7513-115-A	MOUNTED CIRCUIT BOARD "EX-77"
9	()	A-7513-116-A	MOUNTED CIRCUIT BOARD "BKG-2"
10	()	A-7612-227-A	PANEL ASSY, FRONT
11	()	X-2249-306-1	BRACKET ASSY
12	()	X-2249-307-6	HANDLE ASSY, SWITCHING
13	()	X-3691-409-1	ANGLE ASSY
14	()	X-3691-414-1	KNOB, CONTROL ASSY
15	()	X-3691-415-1	KNOB, (MIDDELE) ASSY
16	()	1-541-280-11	FAN (M101)
17	()	1-562-726-11	RECEPTACLE, 37P MALE
18	()	1-935-421-11	BNC, CONNECTOR WITH HARNESS "IN PUT [BNC]"
19	()	1-935-422-11	CONNECTOR WITH HARNESS "CCU"
20	()	1-935-423-11	BNC, CONNECTOR WITH HARNESS "OUT PUT [BNC]"
21	()	2-249-362-00	STUD
22	()	2-249-373-00	SPRING
23	()	3-691-404-01	NUT (37P), PLATE
24	()	3-691-405-02	PIN, STOPPER
25	()	3-691-415-01	SCREW, KNURL
26	()	3-691-416-01	NUT, FLOATING
27	()	3-691-440-01	TABLE, FULCRUM
28	()	3-691-450-01	COVER, LOWER
29	()	3-691-454-01	COVER, UPPER
30	()	3-691-455-02	COVER, (RIGHT), SIDE
31	()	3-691-456-02	COVER, (LEFT), SIDE
32	()	3-691-481-01	GUARD FINGER
33	()	3-694-107-01	GUIDE, SPRING
34	()	3-694-110-01	INSULATOR,"CP-90"
35		3-701-441-01	WASHER
36		8-719-907-03	DIODE, BD703G "POWER" (PL101)
37	()	3-665-566-01	STOPPER, BINDING

9-3. ELECTRICAL PARTS LIST

CAPACITOR

CERAMIC CAPACITOR



47PF through 0.15μF 50V

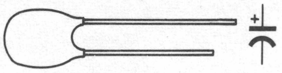
Parts No. 1-161-□□□-00

Value	Parts No. -□□□-
47P 5%	855
51P 5%	476
56P 5%	477
62P 5%	478
68P 5%	457
75P 5%	479
82P 5%	458
91P 5%	480
100P 5%	459
120P 5%	460
150P 5%	461

Value	Parts No. -□□□-
180P 5%	462
220P 5%	463
270P 5%	464
330P 5%	465
390P 5%	466
470P 5%	467
560P 5%	468
680P 5%	469
820P 5%	470
0.001μ 10%	471

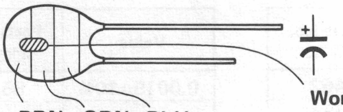
Value	Parts No. -□□□-
0.0015μ 10%	852
0.0022μ 10%	853
0.0033μ 10%	854
0.0047μ 10%	472
0.01μ 10%	473
0.022μ 10%	474
0.033μ 10%	475
0.047μ 10%	481
0.068μ 10%	482
0.1μ 10%	483
0.15μ 10%	484

TANTALUM CAPACITOR



0.01μF through 100μF ± 10%
3.15V through 35V

NOTE: The value of the parts that are marked by * in the below table are indicated by color code. (to the value with ±20%)



Ex. BRN GRN BLU
1 5 6

15×10^6 pF = 15μF

Working Voltage Color Code

BLK	RED	YEL	GRN	BLU	GRY	WHT
10V	35	6.3	16	20	25	3.15

Parts No. 1-131-□□□-00

Value		Parts No. −□□□−
0.01μ	35V	*396
0.015	35	*397
0.022	35	*398
0.033	35	*399
0.047	35	*400
0.068	35	*401
0.1	35	*402
0.15	35	*403
0.22	35	*404
0.33	25	*409
	35	*405
0.47	20	*412
	35	*406
0.68	16	*415
	25	*410
	35	*407
1.0	10	*418
	20	*413

Value		Parts No. −□□□−
1.0μ	35V	*408
1.5	6.3	*421
	16	*416
	25	*411
	35	348
2.2	3.15	*424
	10	*419
	20	*414
	25	355
	35	349
3.3	6.3	*422
	16	*417
	20	362
	25	356
	35	350
4.7	3.15	*425
	10	*420
	16	369

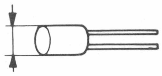
Value		Parts No. −□□□−
4.7μ	20V	363
	25	357
	35	351
6.8	6.3	*423
	10	376
	16	370
	20	364
	25	358
	35	352
10	3.15	*426
	6.3	383
	10	377
	16	371
	20	365
	25	359
	35	353
15	3.15	390
	6.3	384

Value		Parts No. −□□□−
15μ	10V	378
	16	372
	20	366
	25	360
22	3.15	391
	6.3	385
	10	379
	16	373
	20	367
33	3.15	392
	6.3	386
	10	380
	16	374
47	3.15	393
	6.3	387
	10	381
68	3.15	394
	6.3	388
100	3.15	395

INDUCTOR

MICRO INDUCTOR

1 μH through 470 μH
±5%



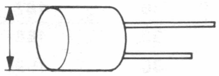
5mm dia

Parts No. 1-407-□□□-XX

Value	Parts No. –□□□–	Value	Parts No. –□□□–	Value	Parts No. –□□□–	Value	Parts No. –□□□–
1 μH	178	4.7 μH	186	22 μH	161	100 μH	169
1.2	179	5.6	187	27	162	120	170
1.5	180	6.8	188	33	163	150	171
1.8	181	8.2	189	39	164	180	172
2.2	182	10	157	47	165	220	173
2.7	183	12	158	56	166	270	174
3.3	184	15	159	68	167	330	175
3.9	185	18	160	82	168	390	176
						470	177

MICRO INDUCTOR

470 μH through 33 mH
±5%



10mm dia

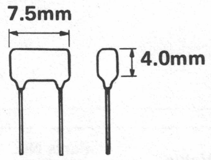
Parts No. 1-407-□□□-00

Value	Parts No. –□□□–	Value	Parts No. –□□□–	Value	Parts No. –□□□–	Value	Parts No. –□□□–
470 μH	488	1.5 mH	494	4.7 mH	500	15 mH	506
560	489	1.8	495	5.6	501	18	507
680	490	2.2	496	6.8	502	22	508
820	491	2.7	497	8.2	503	27	509
1 mH	492	3.3	498	10	504	33	510
1.2	493	3.9	499	12	505		

RESISTOR

METAL FILM RESISTOR

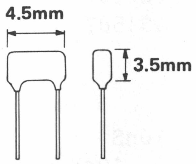
± 1%, 1/4W
10Ω through 100kΩ



Parts No. 1-214-□□□-00

Value	Parts No. –□□□–	Value	Parts No. –□□□–	Value	Parts No. –□□□–	Value	Parts No. –□□□–
10Ω	084	100Ω	108	1.0kΩ	132	10kΩ	156
11	085	110	109	1.1	133	11	157
12	086	120	110	1.2	134	12	158
13	087	130	111	1.3	135	13	159
15	088	150	112	1.5	136	15	160
16	089	160	113	1.6	137	16	161
18	090	180	114	1.8	138	18	162
20	091	200	115	2.0	139	20	163
22	092	220	116	2.2	140	22	164
24	093	240	117	2.4	141	24	165
27	094	270	118	2.7	142	27	166
30	095	300	119	3.0	143	30	167
33	096	330	120	3.3	144	33	168
36	097	360	121	3.6	145	36	169
39	098	390	122	3.9	146	39	170
43	099	430	123	4.3	147	43	171
47	100	470	124	4.7	148	47	172
51	101	510	125	5.1	149	51	173
56	102	560	126	5.6	150	56	174
62	103	620	127	6.2	151	62	175
68	104	680	128	6.8	152	68	176
75	105	750	129	7.5	153	75	177
82	106	820	130	8.2	154	82	178
91	107	910	131	9.1	155	91	179
						100	180

METAL FILM RESISTOR



± 1%, 1/8W

Parts No. 1-214-□□□-00 (10Ω through 33kΩ)
Parts No. 1-215-□□□-11 (36kΩ through 100kΩ)

Value	Parts No. −□□□−
10Ω	509
11	510
12	511
13	512
15	513
16	514
18	515
20	516
22	517
24	518
27	519
30	520
33	521
36	522
39	523
43	524
47	525
51	526
56	527
62	528
68	529
75	530
82	531
91	532

Value	Parts No. −□□□−
100Ω	533
110	534
120	535
130	536
150	537
160	538
180	539
200	540
220	541
240	542
270	543
300	544
330	545
360	546
390	547
430	548
470	549
510	550
560	551
620	552
680	553
750	554
820	555
910	556

Value	Parts No. −□□□−
1.0kΩ	557
1.1	558
1.2	559
1.3	560
1.5	561
1.6	562
1.8	563
2.0	564
2.2	565
2.4	566
2.7	567
3.0	568
3.3	569
3.6	570
3.9	571
4.3	572
4.7	573
5.1	574
5.6	575
6.2	576
6.8	577
7.5	578
8.2	579
9.1	580

Value	Parts No. −□□□−
10kΩ	581
11	582
12	583
13	584
15	585
16	586
18	587
20	588
22	589
24	590
27	591
30	592
33	593

36kΩ	819
39	820
43	821
47	822
51	823
56	824
62	825
68	826
75	827
82	828
91	829
100	830

Ref.No	Part No.	Description
ADA-1 BOARD		
	() A-7513-111-A	MOUNTED CIRCUIT BOARD "ADA-1"
C1	1-131-480-00	TANTALUM 68 20% 16V
C2	1-131-480-00	TANTALUM 68 20% 16V
C8	1-131-480-00	TANTALUM 68 20% 16V
C9	1-131-480-00	TANTALUM 68 20% 16V
C24	1-108-587-00	MYLAR 0.022 5% 50V
C32	1-109-535-00	MICA 100PF 5% 100V
C33	1-107-210-00	MICA 22PF 5% 500V
C49	1-131-480-00	TANTALUM 68 20% 16V
C50	1-131-480-00	TANTALUM 68 20% 16V
C56	1-131-480-00	TANTALUM 68 20% 16V
C57	1-131-480-00	TANTALUM 68 20% 16V
C72	1-108-587-00	MYLAR 0.022 5% 50V
C80	1-109-535-00	MICA 100PF 5% 100V
C81	1-107-210-00	MICA 22PF 5% 500V
C96	1-131-480-00	TANTALUM 68 20% 16V
C97	1-131-480-00	TANTALUM 68 20% 16V
C103	1-131-480-00	TANTALUM 68 20% 16V
C104	1-131-480-00	TANTALUM 68 20% 16V
C119	1-108-587-00	MYLAR 0.022 5% 50V
C127	1-109-535-00	MICA 100PF 5% 100V
C128	1-107-210-00	MICA 22PF 5% 500V
C143	1-123-333-00	ELECT 100 20% 25V
C146	1-123-333-00	ELECT 100 20% 25V
C149	1-123-333-00	ELECT 100 20% 25V
C156	1-123-333-00	ELECT 100 20% 25V
C175	1-108-587-00	MYLAR 0.022 5% 50V
C194	1-108-587-00	MYLAR 0.022 5% 50V
C213	1-108-587-00	MYLAR 0.022 5% 50V
C230	1-123-333-00	ELECT 100 20% 25V
CN1	1-561-310-00	RECEPTACLE, RF
CN2	1-561-310-00	RECEPTACLE, RF
CN3	1-561-310-00	RECEPTACLE, RF
CN4	1-561-310-00	RECEPTACLE, RF
CN5	1-561-310-00	RECEPTACLE, RF
CN6	1-561-310-00	RECEPTACLE, RF
CN7	1-561-310-00	RECEPTACLE, RF
	1-935-413-11	ADA-SG HARNESS
CN8	1-561-310-00	RECEPTACLE, RF
	1-935-413-11	ADA-SG HARNESS
CN9	1-561-310-00	RECEPTACLE, RF
	1-935-413-11	ADA-SG HARNESS

Ref.No.	Part No.	Description
D1	8-719-162-07	RD6.2EB
D2	8-719-815-87	1S1587
D3	8-719-815-87	1S1587
D4	8-719-815-87	1S1587
D5	8-719-815-87	1S1587
D6	8-719-815-87	1S1587
D7	8-719-815-87	1S1587
DL1	1-415-377-11	10nS
DL2	1-415-393-11	0 10nS
DL3	1-415-393-11	0 10nS
DL4	1-415-393-11	0 10nS
DL5	1-415-393-11	0 10nS
DL6	1-415-393-11	0 10nS
DL7	1-415-393-11	0 10nS
DL8	1-415-393-11	0 10nS
DL9	1-415-393-11	0 10nS
DL10	1-415-393-11	0 10nS
FB1 to FB79		
	1-535-178-00	
IC1	8-741-130-60	BX1306: SONY
IC2	8-741-130-60	BX1306: SONY
IC3	8-743-931-10	BX3931A: SONY
IC4	8-749-900-00	HD-1A: SONY
IC5	8-749-900-00	HD-1A: SONY
IC6	8-759-930-80	CA3080E: RCA
IC7	8-759-990-82	TL082CP: TI
IC8	8-752-011-60	CX20116: SONY
IC9	8-759-301-10	HD10110: HITACHI
IC10	8-759-301-01	HD10101: HITACHI
IC11	8-759-001-76	MC10176L: MOTOROLA
IC12	8-759-301-31	HD10131: HITACHI
IC13	8-759-001-76	MC10176L: MOTOrOLA
IC14	8-759-301-31	HD10131: HITACHI
IC15	8-759-001-16	MC10116L: MOTOROLA
IC16	8-759-301-01	HD10101: HITACHI
IC17	8-759-301-01	HD10101: HITACHI
IC18	8-759-301-01	HD10101: HITACHI
IC19	8-741-130-60	BX1306: SONY
IC20	8-741-130-60	BX1306: SONY

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
IC21	8-743-931-10	BX3931A: SONY	IC66	8-749-900-00	HD-1A: SONY
IC22	8-749-900-00	HD-1A: SONY	IC67	8-759-930-80	CA3080E: RCA
IC23	8-743-931-10	BX3931A: SONY	IC68	8-759-990-82	TL082CP: TI
IC24	8-759-930-80	CA3080E: RCA	IC69	8-752-020-20	CX20202: SONY
IC25	8-759-990-82	TL082CP: TI	IC70	8-759-301-31	HD10131: HITACHI
IC26	8-752-011-60	CX20116: SONY	IC71	8-759-001-76	MC10176L: MOTOROLA
IC27	8-759-301-01	HD10101: HITACHI	IC72	8-759-301-01	HD10101: HITACHI
IC28	8-759-001-76	MC10176L: MOTOROLA	IC73	8-759-301-31	HD10131: HITACHI
IC29	8-759-301-31	HD10131: HITACHI	IC74	8-759-001-76	MC10176L: MOTOROLA
IC30	8-759-001-76	MC10176L: MOTOROLA	IC75	8-759-001-15	MC10115L: MOTOROLA
IC31	8-759-301-31	HD10131: HITACHI	IC76	8-759-001-15	MC10115L: MOTOROLA
IC32	8-759-301-01	HD10101: HITACHI	IC77	8-749-900-00	HD-1A: SONY
IC33	8-759-301-01	HD10101: HITACHI	IC78	8-749-900-00	HD-1A: SONY
IC34	8-759-301-01	HD10101: HITACHI	IC79	8-759-930-80	CA3080E: RCA
IC35	8-741-130-60	BX1306: SONY	IC80	8-759-990-82	TL082CP: TI
IC36	8-741-130-60	BX1306: SONY	IC81	8-752-020-20	CX20202: SONY
IC37	8-743-931-10	BX3931A: SONY	IC82	8-759-301-31	HD10131: HITACHI
IC38	8-749-900-00	HD-1A: SONY	IC83	8-759-001-76	MC10176L: MOTOROLA
IC39	8-743-931-10	BX3931A: SONY	IC84	8-759-301-01	HD10101: HITACHI
IC40	8-759-930-80	CA3080E: RCA	IC85	8-759-301-31	HD10131: HITACHI
IC41	8-759-990-82	TL082CP: TI	IC86	8-759-001-76	MC10176L: MOTOROLA
IC42	8-759-942-65	SN74265N: TI	IC87	8-759-001-15	MC10115L: MOTOROLA
IC43	8-752-011-60	CX20116: SONY	IC88	8-759-001-15	MC10115L: MOTOROLA
IC44	8-759-301-01	HD10101: HITACHI	IC89	8-759-001-15	MC10115L: MOTOROLA
IC45	8-759-001-76	MC10176L: MOTOROLA	IC90	8-759-914-44	TL431CLPB: TI
IC46	8-759-301-31	HD10131: HITACHI	IC91	8-759-914-44	TL431CLPB: TI
IC47	8-759-001-76	MC10176L: MOTOROLA	IC92	8-759-914-44	TL431CLPB: TI
IC48	8-759-301-31	HD10131: HITACHI	IC93	8-759-914-44	TL431CLPB: TI
IC49	8-759-301-01	HD10101: HITACHI	IC94	8-759-914-44	TL431CLPB: TI
IC50	8-759-301-01	HD10101: HITACHI	IC95	8-759-914-44	TL431CLPB: TI
IC51	8-759-301-01	HD10101: HITACHI			
IC52	8-759-990-82	TL082CP: TI			
IC53	8-749-900-00	HD-1A: SONY	L4	1-421-329-00	CHOKE 10
IC54	8-749-900-00	HD-1A: SONY	L5	1-421-329-00	CHOKE 10
IC55	8-759-930-80	CA3080E: RCA	L6	1-421-329-00	CHOKE 10
			L7	1-421-329-00	CHOKE 10
IC56	8-759-990-82	TL082CP: TI	L8	1-421-329-00	CHOKE 10
IC57	8-752-020-20	CX20202: SONY	L9	1-421-329-00	CHOKE 10
IC58	8-759-301-31	HD10131: HITACHI			
IC59	8-759-001-76	MC10176L: MOTOROLA			
IC60	8-759-301-01	HD10101: HITACHI			
			LPF1	1-235-463-11	LPF-NS9 27MHz
IC61	8-759-301-31	HD10131: HITACHI	LPF2	1-235-463-11	LPF-NS9 27MHz
IC62	8-759-001-76	MC10176L: MOTOROLA	LPF3	1-235-463-11	LPF-NS9 27MHz
IC63	8-759-001-15	MC10115L: MOTOROLA	LPF4	1-235-463-11	LPF-NS9 27MHz
IC64	8-759-001-15	MC10115L: MOTOROLA	LPF5	1-235-463-11	LPF-NS9 27MHz
IC65	8-749-900-00	HD-1A: SONY	LPF6	1-235-463-11	LPF-NS9 27MHz

Ref.No.	Part No.	Description
Q1	8-729-105-72	2SK523-L1
Q2	8-729-105-72	2SK523-L1
Q3	8-729-105-72	2SK523-L1
Q4	8-729-105-72	2SK523-L1
Q5	8-729-173-37	2SA733-P
Q6	8-729-105-72	2SK523-L1
Q7	8-729-105-72	2SK523-L1
Q8	8-729-105-72	2SK523-L1
Q9	8-729-105-72	2SK523-L1
Q10	8-729-173-37	2SA733-P
Q11	8-729-105-72	2SK523-L1
Q12	8-729-105-72	2SK523-L1
Q13	8-729-105-72	2SK523-L1
Q14	8-729-105-72	2SK523-L1
Q15	8-729-173-37	2SA733-P
Q16	8-729-120-33	2SB703A
Q17	8-729-173-37	2SA733-P
Q18	8-729-173-37	2SA733-P
Q19	8-729-173-37	2SA733-P
Q20	8-729-173-37	2SA733-P
Q21	8-729-173-37	2SA733-P
Q22	8-729-173-37	2SA733-P
R150	1-214-833-00	METAL 51 1% 1/2W
R151	1-214-862-00	METAL 820 1% 1/2W
	(Ser. No. 10201 and higher)	
R152	1-214-873-00	METAL 2400 1% 1/2W
	(Ser. No. 10201 and higher)	
R184	1-214-833-00	METAL 51 1% 1/2W
R185	1-214-862-00	METAL 820 1% 1/2W
	(Ser. No. 10201 and higher)	
R186	1-214-873-00	METAL 2400 1% 1/2W
	(Ser. No. 10201 and higher)	
R218	1-214-833-00	METAL 51 1% 1/2W
R219	1-214-862-00	METAL 820 1% 1/2W
	(Ser. No. 10201 and higher)	
R220	1-214-873-00	METAL 2400 1% 1/2W
	(Ser. No. 10201 and higher)	
RB1	1-231-401-00	470
RB2	1-231-401-00	470
RB3	1-231-401-00	470
RB4	1-231-401-00	470
RB5	1-231-401-00	470
RB6	1-231-501-00	470X4
RB7	1-231-456-00	CR
RB8	1-231-401-00	470
RB9	1-231-456-00	CR
RB10	1-231-450-00	3.3KX8

Ref.No.	Part No.	Description
RB11	1-231-401-00	470
RB12	1-231-401-00	470
RB13	1-231-401-00	470
RB14	1-231-401-00	470
RB15	1-231-401-00	470
RB16	1-231-401-00	470
RB17	1-231-401-00	470
RB18	1-231-401-00	470
RB19	1-231-401-00	470
RB20	1-231-401-00	470
RB21	1-231-456-00	CR
RB22	1-231-456-00	CR
RB23	1-231-456-00	CR
RB24	1-231-456-00	CR
RB25	1-231-401-00	470
RB26	1-231-401-00	470
RB27	1-231-401-00	470
RB28	1-231-456-00	CR
RB29	1-231-456-00	CR
RB30	1-231-456-00	CR
RB31	1-231-456-00	CR
RB32	1-231-401-00	470
RB33	1-231-401-00	470
RB34	1-231-401-00	470
RB35	1-231-456-00	CR
RB36	1-231-456-00	CR
RB37	1-231-456-00	CR
RB38	1-231-456-00	CR
RB39	1-231-401-00	470
RB40	1-231-401-00	470
RB41	1-231-401-00	470
RV1	1-224-937-00	METAL 1K
RV2	1-224-934-00	METAL 100
RV3	1-224-937-00	METAL 1K
RV4	1-224-937-00	METAL 1K
RV5	1-224-934-00	METAL 100
RV6	1-224-937-00	METAL 1K
RV7	1-224-937-00	METAL 1K
RV8	1-224-934-00	METAL 100
RV9	1-224-937-00	METAL 1K
RV10	1-224-936-00	METAL 500
RV11	1-224-936-00	METAL 500
RV12	1-224-936-00	METAL 500

Ref.No.	Part No.	Description
BKG-2 BOARD		
	( ) A-7513-116-A	MOUNTED CIRCUIT BOARD "BKG-2"
C1	1-123-333-00	ELECT 100 20% 25V
C2	1-123-333-00	ELECT 100 20% 25V
IC1A	8-759-301-31	HD10131: HITACHI
IC1B	8-759-001-76	MC10176L: MOTOROLA
IC1D	8-759-301-31	HD10131: HITACHI
IC1E	8-759-001-76	MC10176L: MOTOROLA
IC1G	8-759-301-01	HD10101: HITACHI
IC1H	8-759-301-31	HD10131: HITACHI
IC1J	8-759-001-76	MC10176L: MOTOROLA
IC2A	8-759-003-42	MC10158L: MOTOROLA
IC2B	8-759-003-42	MC10158L: MOTOROLA
IC2C	8-759-001-76	MC10176L: MOTOROLA
IC2D	8-759-003-42	MC10158L: MOTOROLA
IC2E	8-759-003-42	MC10158L: MOTOROLA
IC2F	8-759-001-76	MC10176L: MOTOROLA
IC2G	8-759-301-01	HD10101: HITACHI
IC2J	8-759-003-42	MC10158L: MOTOROLA
IC2K	8-759-003-42	MC10158L: MOTOROLA
IC2L	8-759-001-76	MC10176L: MOTOROLA
IC3A	8-759-001-76	MC10176L: MOTOROLA
IC3B	8-759-301-31	HD10131: HITACHI
IC3C	8-759-003-42	MC10158L: MOTOROLA
IC3D	8-759-001-76	MC10176L: MOTOROLA
IC3E	8-759-301-31	HD10131: HITACHI
IC3F	8-759-003-42	MC10158L: MOTOROLA
IC3G	8-759-301-01	HD10101: HITACHI
IC3J	8-759-001-76	MC10176L: MOTOROLA
IC3K	8-759-301-31	HD10131: HITACHI
IC3L	8-759-003-42	MC10158L: MOTOROLA
IC4A	8-759-301-31	HD10131: HITACHI
IC4B	8-759-003-42	MC10158L: MOTOROLA
IC4C	8-759-003-42	MC10158L: MOTOROLA
IC4D	8-759-301-31	HD10131: HITACHI
IC4E	8-759-003-42	MC10158L: MOTOROLA
IC4F	8-759-003-42	MC10158L: MOTOROLA
IC4G	8-759-301-01	HD10101: HITACHI
IC4J	8-759-301-31	HD10131: HITACHI

Ref.No.	Part No.	Description
IC4K	8-759-003-42	MC10158L: MOTOROLA
IC4L	8-759-003-42	MC10158L: MOTOROLA
IC5A	8-759-003-42	MC10158L: MOTOROLA
IC5B	8-759-003-42	MC10158L: MOTOROLA
IC5C	8-759-001-76	MC10176L: MOTOROLA
IC5D	8-759-003-42	MC10158L: MOTOROLA
IC5E	8-759-003-42	MC10158L: MOTOROLA
IC5F	8-759-001-76	MC10176L: MOTOROLA
IC5G	8-759-301-01	HD10101: HITACHI
IC5H	8-759-301-01	HD10101: HITACHI
IC5J	8-759-003-42	MC10158L: MOTOROLA
IC5K	8-759-003-42	MC10158L: MOTOROLA
IC5L	8-759-001-76	MC10176L: MOTOROLA
IC6A	8-759-001-76	MC10176L: MOTOROLA
IC6B	8-759-003-42	MC10158L: MOTOROLA
IC6C	8-759-764-92	MCM10149L-BLM2: MOTOROLA
IC6D	8-759-001-76	MC10176L: MOTOROLA
IC6E	8-759-003-42	MC10158L: MOTOROLA
IC6F	8-759-764-92	MCM10149L-BLM2: MOTOROLA
IC6G	8-759-301-01	HD10101: HITACHI
IC6J	8-759-001-76	MC10176L: MOTOROLA
IC6K	8-759-003-42	MC10158L: MOTOROLA
IC6L	8-759-764-92	MCM10149L-BLM2: MOTOROLA
IC7A	8-759-764-92	MCM10149L-BLM2: MOTOROLA
IC7B	8-759-301-31	HD10131: HITACHI
IC7C	8-759-764-90	MCM10149L-BLP2: MOTOROLA
IC7D	8-759-764-92	MCM10149L-BLM2: MOTOROLA
IC7E	8-759-301-31	HD10131: HITACHI
IC7F	8-759-764-90	MCM10149L-BLP2: MOTOROLA
IC7G	8-759-301-01	HD10101: HITACHI
IC7H	8-759-001-76	MC10176L: MOTOROLA
IC7J	8-759-764-92	MCM10149L-BLM2: MOTOROLA
IC7K	8-759-301-31	HD10131: HITACHI
IC7L	8-759-764-90	MCM10149L-BLP2: MOTOROLA
IC8A	8-759-764-90	MCM10149L-BLP2: MOTOROLA
IC8B	8-759-301-31	HD10131: HITACHI
IC8C	8-759-764-91	MCM10149L-BLM1: MOTOROLA
IC8D	8-759-764-90	MCM10149L-BLP2: MOTOROLA
IC8E	8-759-301-31	HD10131: HITACHI
IC8F	8-759-764-91	MCM10149L-BLM1: MOTOROLA
IC8H	8-759-003-46	MC10162L: MOTOROLA
IC8J	8-759-764-90	MCM10149L-BLP2: MOTOROLA
IC8K	8-759-301-31	HD10131: HITACHI
IC8L	8-759-764-91	MCM10149L-BLM1: MOTOROLA
IC9A	8-759-764-91	MCM10149L-BLM1: MOTOROLA

Ref.No.	Part No.	Description
IC9B	8-759-301-01	HD10101: HITACHI
IC9C	8-759-764-89	MCM10149L-BLP1: MOTOROLA
IC9D	8-759-764-91	MCM10149L-BLM1: MOTOROLA
IC9E	8-759-301-01	HD10101: HITACHI
IC9F	8-759-764-89	MCM10149L-BLP1: MOTOROLA
IC9G	8-759-301-01	HD10101: HITACHI
IC9H	8-759-301-01	HD10101: HITACHI
IC9J	8-759-764-91	MCM10149L-BLM1: MOTOROLA
IC9K	8-759-301-01	HD10101: HITACHI
IC9L	8-759-764-89	MCM10149L-BLP1: MOTOROLA
IC10A	8-759-764-89	MCM10149L-BLP1: MOTOROLA
IC10B	8-759-301-01	HD10101: HITACHI
IC10C	8-759-001-76	MC10176L: MOTOROLA
IC10D	8-759-764-89	MCM10149L-BLP1: MOTOROLA
IC10E	8-759-301-01	HD10101: HITACHI
IC10F	8-759-001-76	MC10176L: MOTOROLA
IC10G	8-759-301-01	HD10101: HITACHI
IC10H	8-759-301-01	HD10101: HITACHI
IC10J	8-759-764-89	MCM10149L-BLP1: MOTOROLA
IC10K	8-759-301-01	HD10101: HITACHI
IC10L	8-759-001-76	MC10176L: MOTOROLA
IC11A	8-759-001-76	MC10176L: MOTOROLA
IC11B	8-759-001-76	MC10176L: MOTOROLA
IC11C	8-759-001-76	MC10176L: MOTOROLA
IC11D	8-759-001-76	MC10176L: MOTOROLA
IC11E	8-759-001-76	MC10176L: MOTOROLA
IC11F	8-759-001-76	MC10176L: MOTOROLA
IC11G	8-759-301-01	HD10101: HITACHI
IC11H	8-759-301-01	HD10101: HITACHI
IC11J	8-759-001-76	MC10176L: MOTOROLA
IC11K	8-759-001-76	MC10176L: MOTOROLA
IC11L	8-759-001-76	MC10176L: MOTOROLA
IC12A	8-759-003-62	MC10181L: MOTOROLA
IC12C	8-759-003-62	MC10181L: MOTOROLA
IC12D	8-759-003-62	MC10181L: MOTOROLA
IC12F	8-759-003-62	MC10181L: MOTOROLA
IC12G	8-759-301-10	HD10110: HITACHI
IC12H	8-759-301-10	HD10110: HITACHI
IC12J	8-759-003-62	MC10181L: MOTOROLA
IC12L	8-759-003-62	MC10181L: MOTOROLA
IC13A	8-759-003-62	MC10181L: MOTOROLA
IC13B	8-759-001-76	MC10176L: MOTOROLA
IC13C	8-759-003-62	MC10181L: MOTOROLA
IC13D	8-759-003-62	MC10181L: MOTOROLA
IC13E	8-759-001-76	MC10176L: MOTOROLA

Ref.No.	Part No.	Description
IC13F	8-759-003-62	MC10181L: MOTOROLA
IC13G	8-759-301-10	HD10110: HITACHI
IC13H	8-759-301-10	HD10110: HITACHI
IC13J	8-759-003-62	MC10181L: MOTOROLA
IC13K	8-759-001-76	MC10176L: MOTOROLA
IC13L	8-759-003-62	MC10181L: MOTOROLA
IC14A	8-759-001-76	MC10176L: MOTOROLA
IC14B	8-759-001-76	MC10176L: MOTOROLA
IC14C	8-759-001-76	MC10176L: MOTOROLA
IC14D	8-759-001-76	MC10176L: MOTOROLA
IC14E	8-759-001-76	MC10176L: MOTOROLA
IC14F	8-759-001-76	MC10176L: MOTOROLA
IC14G	8-759-301-10	HD10110: HITACHI
IC14H	8-759-301-10	HD10110: HITACHI
IC14J	8-759-001-76	MC10176L: MOTOROLA
IC14K	8-759-001-76	MC10176L: MOTOROLA
IC14L	8-759-001-76	MC10176L: MOTOROLA
IC15A	8-759-301-31	HD10131: HITACHI
IC15B	8-759-001-76	MC10176L: MOTOROLA
IC15C	8-759-001-76	MC10176L: MOTOROLA
IC15D	8-759-301-31	HD10131: HITACHI
IC15E	8-759-001-76	MC10176L: MOTOROLA
IC15F	8-759-001-76	MC10176L: MOTOROLA
IC15G	8-759-301-10	HD10110: HITACHI
IC15H	8-759-301-10	HD10110: HITACHI
IC15J	8-759-301-31	HD10131: HITACHI
IC15K	8-759-001-76	MC10176L: MOTOROLA
IC15L	8-759-001-76	MC10176L: MOTOROLA
IC16C	8-759-001-76	MC10176L: MOTOROLA
IC16F	8-759-001-76	MC10176L: MOTOROLA
IC16G	8-759-301-01	HD10101: HITACHI
IC16H	8-759-301-01	HD10101: HITACHI
IC16L	8-759-001-76	MC10176L: MOTOROLA
IC17A	8-759-001-15	MC10115L: MOTOROLA
IC17B	8-759-001-15	MC10115L: MOTOROLA
IC17C	8-759-001-15	MC10115L: MOTOROLA
IC17D	8-759-001-16	MC10116L: MOTOROLA
IC17E	8-759-001-16	MC10116L: MOTOROLA
IC17F	8-759-301-01	HD10101: HITACHI
IC17G	8-759-001-15	MC10115L: MOTOROLA
IC17H	8-759-001-15	MC10115L: MOTOROLA
IC17J	8-759-301-01	HD10101: HITACHI
IC17K	8-759-301-01	HD10101: HITACHI
IC17L	8-759-301-01	HD10101: HITACHI
IC18A	8-759-001-15	MC10115L: MOTOROLA

Ref.No.	Part No.	Description
IC18B	8-759-001-15	MC10115L: MOTOROLA
IC18C	8-759-001-15	MC10115L: MOTOROLA
IC18D	8-759-001-16	MC10116L: MOTOROLA
IC18E	8-759-001-16	MC10116L: MOTOROLA
IC18F	8-759-001-15	MC10115L: MOTOROLA
IC18G	8-759-001-15	MC10115L: MOTOROLA
IC18H	8-759-001-15	MC10115L: MOTOROLA
IC18J	8-759-301-01	HD10101: HITACHI
IC18K	8-759-301-01	HD10101: HITACHI
IC18L	8-759-301-01	HD10101: HITACHI
LED1	8-719-812-41	TLR124
RB1	1-231-501-00	470X4
RB2	1-231-404-00	680
RB3	1-235-461-11	680X6
RB4	1-231-505-11	680X4
RB5	1-231-505-11	680X4
RB6	1-235-461-11	680X6
RB7	1-235-461-11	680X6
RB8	1-231-404-00	680
RB9	1-231-505-11	680X4
RB10	1-235-461-11	680X6
RB11	1-235-461-11	680X6
RB12	1-231-505-11	680X4
RB13	1-231-505-11	680X4
RB14	1-235-461-11	680X6
RB15	1-231-505-11	680X4
RB16	1-235-462-11	470X6
RB18	1-235-456-00	CR
RB19	1-235-456-00	CR
RB20	1-235-456-00	CR
RB21	1-235-456-00	CR
RB22	1-235-462-11	470X6
RB23	1-231-404-00	680
RB24	1-231-505-11	680X4
RB25	1-231-505-11	680X4
RB26	1-235-461-11	680X6
RB27	1-231-404-00	680
RB28	1-235-461-11	680X6
RB29	1-231-505-11	680X4
RB30	1-231-505-11	680X4
RB31	1-231-505-11	680X4

Ref.No.	Part No.	Description
RB32	1-231-505-11	680X4
RB33	1-235-461-11	680X6
RB34	1-235-461-11	680X6
RB35	1-231-401-00	470
RB37	1-231-456-00	CR
RB38	1-231-456-00	CR
RB39	1-231-456-00	CR
RB40	1-231-456-00	CR
RB41	1-235-461-11	680X6
RB42	1-231-404-00	680
RB43	1-235-461-11	680X6
RB44	1-235-461-11	680X6
RB45	1-231-404-00	680
RB46	1-231-505-11	680X4
RB47	1-235-461-11	680X6
RB48	1-235-461-11	680X6
RB49	1-235-461-11	680X6
RB50	1-231-505-11	680X4
RB51	1-235-461-11	680X6
RB52	1-231-505-11	680X4
RB53	1-235-461-11	680X6
RB54	1-235-462-11	470X6
RB55	1-231-401-00	470
RB56	1-231-456-00	CR
RB57	1-231-456-00	CR
RB58	1-231-456-00	CR
RB59	1-231-456-00	CR
RB60	1-231-501-00	470X4
RB61	1-231-404-00	680
RB62	1-235-461-11	680X6
RB63	1-231-505-11	680X4
RB64	1-231-505-11	680X4
RB65	1-235-461-11	680X6
RB66	1-235-461-11	680X6
RB67	1-231-404-00	680
RB68	1-231-505-11	680X4
RB69	1-235-461-11	680X6
RB70	1-235-461-11	680X6
RB71	1-231-505-11	680X4
RB72	1-235-461-11	680X6
RB73	1-231-505-11	680X4
RB74	1-235-462-11	470X6
RB76	1-231-456-00	CR
RB77	1-231-456-00	CR
RB78	1-235-462-11	470X6

Ref.No.	Part No.	Description
RB79	1-231-404-00	680
RB80	1-231-505-11	680X4
RB81	1-231-505-11	680X4
RB82	1-235-461-11	680X6
RB83	1-231-404-00	680
RB84	1-235-461-11	680X6
RB85	1-231-505-11	680X4
RB86	1-231-505-11	680X4
RB87	1-231-505-11	680X4
RB88	1-231-505-11	680X4
RB89	1-235-461-11	680X6
RB90	1-235-461-11	680X6
RB91	1-231-401-00	470
RB93	1-231-505-11	680X4
RB94	1-231-501-00	470X4
RB95	1-231-501-00	470X4
RB96	1-235-461-11	680X6
RB97	1-231-404-00	680
RB98	1-235-461-11	680X6
RB99	1-235-461-11	680X6
RB100	1-231-404-00	680
RB101	1-231-505-11	680X4
RB102	1-235-461-11	680X6
RB103	1-235-461-11	680X6
RB104	1-235-461-11	680X6
RB105	1-231-505-11	680X4
RB106	1-235-461-11	680X6
RB107	1-231-505-11	680X4
RB108	1-235-461-11	680X6
RB109	1-235-462-11	470X6
RB110	1-231-401-00	470
RB111	1-231-456-00	CR
RB112	1-231-505-11	680X4
RB113	1-231-505-11	680X4
RB114	1-231-456-00	CR
RB115	1-231-456-00	CR
RB116	1-231-456-00	CR
RB117	1-231-456-00	CR
RB118	1-231-501-00	470X4
RB119	1-235-461-11	680X6
RB120	1-235-461-11	680X6
RB121	1-231-505-11	680X4
RB122	1-231-505-11	680X4
RB123	1-231-505-11	680X4
RB124	1-231-505-11	680X4

Ref.No.	Part No.	Description
RB125	1-231-456-00	CR
RB126	1-231-456-00	CR
RB127	1-231-456-00	CR
RB128	1-231-456-00	CR
RB129	1-235-462-11	470X6
RB130	1-235-404-00	680
RB131	1-235-461-11	680X6
RB132	1-231-505-11	680X4
RB133	1-231-505-11	680X4
RB134	1-235-461-11	680X6
RB135	1-235-461-11	680X6
RB136	1-231-404-00	680
RB137	1-231-505-11	680X4
RB138	1-235-461-11	680X6
RB139	1-235-461-11	680X6
RB140	1-231-505-11	680X4
RB141	1-231-505-11	680X4
RB142	1-235-461-11	680X6
RB143	1-231-505-11	680X4
RB144	1-235-462-11	470X6
RB146	1-235-462-11	470X6
RB147	1-231-501-00	470X4
RB148	1-231-404-11	680
RB149	1-231-505-11	680X4
RB150	1-231-505-11	680X4
RB151	1-235-461-11	680X6
RB152	1-231-404-00	680
RB153	1-235-461-11	680X6
RB154	1-231-505-11	680X4
RB155	1-231-505-11	680X4
RB156	1-231-505-11	680X4
RB157	1-231-505-11	680X4
RB158	1-235-461-11	680X6
RB159	1-235-461-11	680X6
RB160	1-231-401-00	470
RB162	1-235-462-11	470X6
RB163	1-231-501-00	470X4
RB164	1-235-461-11	680X6
RB165	1-231-404-00	680
RB166	1-235-461-11	680X6
RB167	1-235-461-11	680X6
RB168	1-231-404-00	680
RB169	1-231-505-11	680X4
RB170	1-235-461-11	680X6
RB171	1-235-461-11	680X6

Ref.No.	Part No.	Description
RB172	1-235-461-11	680X6
RB173	1-231-505-11	680X4
RB174	1-235-461-11	680X6
RB175	1-231-505-11	680X4
RB176	1-235-461-11	680X6
RB177	1-235-462-11	470X6
RB178	1-231-401-00	470
RB179	1-235-462-11	470X6
RB180	1-231-501-00	470X4
RB181	1-231-401-00	470
RB182	1-231-401-00	470
RB183	1-231-401-00	470
RB184	1-231-401-00	470
RB185	1-231-401-00	470
RB186	1-231-401-00	470
RB187	1-231-505-11	680X4
SW1	1-553-441-00	TOGGLE

CP-90 BOARD

Ref.No.	Part No.	Description
	() A-7513-107-A	MOUNTED CIRCUIT BOARD [CP-90]
CN1	() 1-560-756-00	RECEPTACLE, 20P
	() 1-935-410-11	MB-CP HARNESS
CN2	() 1-560-309-21	RECEPTACLE, 3P
	1-509-984-00	PLUG HOUSING 3P
	1-560-298-00	PLUG CONTACT
D1	8-719-812-43	TLG124A
D2	8-719-812-43	TLG124A
D3	8-719-812-43	TLG124A
D4	8-719-812-43	TLG124A
D5	8-719-812-43	TLG124A
IC1	8-759-902-44	SN74LS244N: TI
SW1	1-570-132-11	ROTARY "H DET PATIO"
SW2	1-516-994-00	LEVER SLIDE "LIMIT LEVEL"
SW3	1-516-994-00	LEVER SLIDE "CORING LEVEL"
SW4	1-570-132-11	ROTARY "DETAIL GAIN"

Ref.No.	Part No.	Description
DET-2 BOARD		
	A-7513-114-A	MOUNTED CIRCUIT BOARD [DET-2]
C1	1-123-333-00	ELECT 100 20% 25V
C2	1-123-333-00	ELECT 100 20% 25V
D1	8-719-812-43	TLG124A
IC1A	8-759-001-76	MC10176L: MOTOROLA
IC1B	8-759-001-76	MC10176L: MOTOROLA
IC1C	8-759-001-76	MC10176L: MOTOROLA
IC1D	8-759-001-76	MC10176L: MOTOROLA
IC1E	8-759-001-76	MC10176L: MOTOROLA
IC1F	8-759-003-42	MC10158L: MOTOROLA
IC1G	8-759-001-76	MC10176L: MOTOROLA
IC1H	8-759-003-42	MC10158L: MOTOROLA
IC1J	8-759-001-02	MC74HC02N: MOTOROLA
IC1K	8-759-301-01	HD10101: HITACHI
IC2A	8-759-001-76	MC10176L: MOTOROLA
IC2B	8-759-001-76	MC10176L: MOTOROLA
IC2C	8-759-001-76	MC10176L: MOTOROLA
IC2D	8-759-001-76	MC10176L: MOTOROLA
IC2E	8-759-301-31	HD10131: HITACHI
IC2F	8-759-003-42	MC10158L: MOTOROLA
IC2G	8-759-001-76	MC10176L: MOTOROLA
IC2H	8-759-001-76	MC10176L: MOTOROLA
IC2J	8-759-001-76	MC10176L: MOTOROLA
IC2K	8-759-001-76	MC10176L: MOTOROLA
IC2L	8-759-001-76	MC10176L: MOTOROLA
IC2M	8-759-001-76	MC10176L: MOTOROLA
IC2N	8-759-001-76	MC10176L: MOTOROLA
IC2P	8-759-001-76	MC10176L: MOTOROLA
IC3A	8-759-003-42	MC10158L: MOTOROLA
IC3B	8-759-003-42	MC10158L: MOTOROLA
IC3C	8-759-003-42	MC10158L: MOTOROLA
IC3D	8-759-003-42	MC10158L: MOTOROLA
IC3E	8-759-003-42	MC10158L: MOTOROLA
IC3F	8-759-003-42	MC10158L: MOTOROLA
IC3G	8-759-001-76	MC10176L: MOTOROLA
IC3P	8-759-001-76	MC10176L: MOTOROLA
IC4A	8-759-003-42	MC10158L: MOTOROLA
IC4B	8-759-301-01	HD10101: HITACHI
IC4C	8-759-301-01	HD10101: HITACHI
IC4D	8-759-003-42	MC10158L: MOTOROLA
IC4E	8-759-001-76	MC10176L: MOTOROLA
IC4G	8-759-001-76	MC10176L: MOTOROLA
IC4H	8-759-003-62	MC10181L: MOTOROLA
IC4J	8-759-003-62	MC10181L: MOTOROLA
IC4L	8-759-003-62	MC10181L: MOTOROLA
IC4M	8-759-003-62	MC10181L: MOTOROLA
IC4P	8-759-001-76	MC10176L: MOTOROLA
IC5A	8-759-001-76	MC10176L: MOTOROLA
IC5B	8-759-001-76	MC10176L: MOTOROLA
IC5C	8-759-001-76	MC10176L: MOTOROLA
IC5D	8-759-001-76	MC10176L: MOTOROLA
IC5E	8-759-001-76	MC10176L: MOTOROLA
IC5F	8-759-001-76	MC10176L: MOTOROLA
IC5G	8-759-001-76	MC10176L: MOTOROLA
IC5H	8-759-003-62	MC10181L: MOTOROLA
IC5J	8-759-003-62	MC10181L: MOTOROLA
IC5L	8-759-003-62	MC10181L: MOTOROLA
IC5M	8-759-003-62	MC10181L: MOTOROLA
IC5P	8-759-301-31	HD10131: HITACHI
IC6G	8-759-301-31	HD10131: HITACHI
IC6P	8-759-001-76	MC10176L: MOTOROLA
IC7A	8-759-003-62	MC10181L: MOTOROLA
IC7B	8-759-003-62	MC10181L: MOTOROLA
IC7D	8-759-003-62	MC10181L: MOTOROLA
IC7E	8-759-003-62	MC10181L: MOTOROLA
IC7G	8-759-001-76	MC10176L: MOTOROLA
IC7H	8-759-003-62	MC10181L: MOTOROLA
IC7J	8-759-003-62	MC10181L: MOTOROLA
IC7L	8-759-003-62	MC10181L: MOTOROLA
IC7M	8-759-003-62	MC10181L: MOTOROLA
IC7P	8-759-003-42	MC10158L: MOTOROLA
IC8A	8-759-301-07	HD10107: HITACHI
IC8B	8-759-001-76	MC10176L: MOTOROLA
IC8C	8-759-001-76	MC10176L: MOTOROLA
IC8D	8-759-001-76	MC10176L: MOTOROLA
IC8E	8-759-001-76	MC10176L: MOTOROLA
IC8F	8-759-301-07	HD10107: HITACHI
IC8G	8-759-003-42	MC10158L: MOTOROLA
IC8H	8-759-913-97	MBM10474A-15Z: FUJITSU
IC8J	8-759-913-97	MBM10474A-15Z: FUJITSU
IC8L	8-759-913-97	MBM10474A-15Z: FUJITSU
IC8M	8-759-913-97	MBM10474A-15Z: FUJITSU
IC8P	8-759-003-42	MC10158L: MOTOROLA
IC9C	8-759-001-76	MC10176L: MOTOROLA

Ref.No.	Part No.	Description
IC9D	8-759-001-76	MC10176L: MOTOROLA
IC9G	8-759-003-42	MC10158L: MOTOROLA
IC9P	8-759-301-31	HD10131: HITACHI
IC10A	8-759-003-62	MC10181L: MOTOROLA
IC10C	8-759-001-76	MC10176L: MOTOROLA
IC10D	8-759-001-76	MC10176L: MOTOROLA
IC10E	8-759-003-62	MC10181L: MOTOROLA
IC10G	8-759-301-31	HD10131: HITACHI
IC10H	8-759-913-97	MBM10474A-15Z: FUJITSU
IC10J	8-759-913-97	MBM10474A-15Z: FUJITSU
IC10L	8-759-913-97	MBM10474A-15Z: FUJITSU
IC10M	8-759-913-97	MBM10474A-15Z: FUJITSU
IC10P	8-759-001-76	MC10176L: MOTOROLA
IC11A	8-759-003-62	MC10181L: MOTOROLA
IC11C	8-759-301-07	HD10107: HITACHI
IC11D	8-759-301-07	HD10107: HITACHI
IC11E	8-759-003-62	MC10181L: MOTOROLA
IC11G	8-759-001-76	MC10176L: MOTOROLA
IC11H	8-759-913-97	MBM10474A-15Z: FUJITSU
IC11J	8-759-913-97	MBM10474A-15Z: FUJITSU
IC11L	8-759-913-97	MBM10474A-15Z: FUJITSU
IC11M	8-759-913-97	MBM10474A-15Z: FUJITSU
IC11P	8-759-003-42	MC10158L: MOTOROLA
IC12A	8-759-003-42	MC10158L: MOTOROLA
IC12B	8-759-003-42	MC10158L: MOTOROLA
IC12C	8-759-003-42	MC10158L: MOTOROLA
IC12D	8-759-003-42	MC10158L: MOTOROLA
IC12E	8-759-003-42	MC10158L: MOTOROLA
IC12F	8-759-003-42	MC10158L: MOTOROLA
IC12G	8-759-003-42	MC10158L: MOTOROLA
IC12H	8-759-913-97	MBM10474A-15Z: FUJITSU
IC12J	8-759-913-97	MBM10474A-15Z: FUJITSU
IC12L	8-759-913-97	MBM10474A-15Z: FUJITSU
IC12M	8-759-913-97	MBM10474A-15Z: FUJITSU
IC12P	8-759-003-42	MC10158L: MOTOROLA
IC13A	8-759-001-76	MC10176L: MOTOROLA
IC13B	8-759-001-76	MC10176L: MOTOROLA
IC13E	8-759-001-76	MC10176L: MOTOROLA
IC13F	8-759-001-76	MC10176L: MOTOROLA
IC13G	8-759-003-42	MC10158L: MOTOROLA
IC13H	8-759-301-01	HD10101: HITACHI
IC13J	8-759-301-01	HD10101: HITACHI
IC13K	8-759-301-01	HD10101: HITACHI
IC13L	8-759-301-01	HD10101: HITACHI
IC13M	8-759-301-01	HD10101: HITACHI

Ref.No.	Part No.	Description
IC13N	8-759-301-10	HD10110: HITACHI
IC13P	8-759-301-07	HD10107: HITACHI
IC14A	8-759-001-76	MC10176L: MOTOROLA
IC14B	8-759-001-76	MC10176L: MOTOROLA
IC14E	8-759-301-01	HD10101: HITACHI
IC14F	8-759-301-01	HD10101: HITACHI
IC14G	8-759-301-10	HD10110: HITACHI
IC14H	8-759-301-10	HD10110: HITACHI
IC14J	8-759-301-31	HD10131: HITACHI
IC14K	8-759-001-76	MC10176L: MOTOROLA
IC14L	8-759-301-31	HD10131: HITACHI
IC14M	8-759-001-76	MC10176L: MOTOROLA
IC14N	8-759-300-26	HD10136: HITACHI
IC14P	8-759-001-03	MC10103L: MOTOROLA
IC15F	8-759-301-01	HD10101: HITACHI
IC15G	8-759-301-01	HD10101: HITACHI
IC15H	8-759-301-10	HD10110: HITACHI
IC15J	8-759-764-93	MCM10149L-LGD1: MOTOROLA
IC15K	8-759-764-94	MCM10149L-LGD2: MOTOROLA
IC15L	8-759-764-93	MCM10149L-LGD1: MOTOROLA
IC15M	8-759-764-94	MCM10149L-LGD2: MOTOROLA
IC15N	8-759-300-26	HD10136: HITACHI
IC15P	8-759-301-31	HD10131: HITACHI
IC16B	8-759-301-01	HD10101: HITACHI
IC16C	8-759-301-01	HD10101: HITACHI
IC16D	8-759-301-01	HD10101: HITACHI
IC16E	8-759-301-01	HD10101: HITACHI
IC16G	8-759-301-01	HD10101: HITACHI
IC16H	8-759-301-10	HD10110: HITACHI
IC16J	8-759-301-31	HD10131: HITACHI
IC16K	8-759-001-76	MC10176L: MOTOROLA
IC16L	8-759-301-31	HD10131: HITACHI
IC16M	8-759-001-76	MC10176L: MOTOROLA
IC16N	8-759-300-26	HD10136: HITACHI
IC16P	8-759-301-31	HD10131: HITACHI
IC17A	8-759-301-07	HD10107: HITACHI
IC17B	8-759-301-07	HD10107: HITACHI
IC17C	8-759-301-07	HD10107: HITACHI
IC17D	8-759-301-07	HD10107: HITACHI
IC17E	8-759-301-07	HD10107: HITACHI
IC17F	8-759-301-07	HD10107: HITACHI
IC17G	8-759-001-15	MC10115L: MOTOROLA
IC17H	8-759-001-16	MC10116L: MOTOROLA
IC17J	8-759-001-15	MC10115L: MOTOROLA
IC17K	8-759-001-15	MC10115L: MOTOROLA

Ref.No.	Part No.	Description
IC17L	8-759-001-15	MC10115L: MOTOROLA
IC17M	8-759-001-15	MC10115L: MOTOROLA
IC17N	8-759-301-07	HD10107: HITACHI
IC17P	8-759-301-01	HD10101: HITACHI
RB1	1-231-456-00	CR
RB2	1-231-456-00	CR
RB3	1-231-456-00	CR
RB4	1-231-456-00	CR
RB5	1-235-461-11	680X6
RB6	1-231-505-11	680X4
RB7	1-231-404-00	680
RB8	1-235-461-11	680X6
RB9	1-231-505-11	680X4
RB10	1-231-505-11	680X4
RB11	1-231-505-11	680X4
RB12	1-231-505-11	680X4
RB13	1-231-505-11	680X4
RB14	1-231-505-11	680X4
RB15	1-231-404-00	680
RB16	1-231-505-11	680X4
RB17	1-231-404-00	680
RB18	1-231-404-00	680
RB19	1-235-461-11	680X6
RB20	1-231-505-11	680X4
RB21	1-231-404-00	680
RB22	1-231-505-11	680X4
RB23	1-231-404-00	680
RB24	1-231-404-00	680
RB25	1-235-461-11	680X6
RB26	1-231-505-11	680X4
RB27	1-231-505-11	680X4
RB28	1-231-505-11	680X4
RB29	1-231-456-00	CR
RB30	1-231-456-00	CR
RB31	1-231-456-00	CR
RB32	1-231-456-00	CR
RB33	1-235-461-11	680X6
RB34	1-231-505-11	680X4
RB35	1-231-404-00	680
RB36	1-235-461-11	680X6
RB37	1-231-505-11	680X4
RB38	1-231-404-00	680
RB39	1-231-505-11	680X4
RB40	1-231-404-00	680

Ref.No.	Part No.	Description
RB41	1-231-404-00	680
RB42	1-235-461-11	680X6
RB43	1-231-505-11	680X4
RB44	1-231-404-00	680
RB45	1-231-505-11	680X4
RB46	1-231-404-00	680
RB47	1-231-404-00	680
RB48	1-235-461-11	680X6
RB49	1-231-505-11	680X4
RB50	1-231-404-00	680
RB51	1-231-404-00	680
RB52	1-235-461-11	680X6
RB54	1-235-461-11	680X6
RB55	1-235-461-11	680X6
RB56	1-231-404-00	680
RB57	1-231-404-00	680
RB58	1-235-461-11	680X6
RB59	1-231-505-11	680X4
RB60	1-235-461-11	680X6
RB61	1-235-461-11	680X6
RB62	1-231-505-11	680X4
RB63	1-231-505-11	680X4
RB64	1-231-505-11	680X4
RB65	1-231-404-00	680
RB66	1-231-404-00	680
RB67	1-231-505-11	680X4
RB68	1-231-505-11	680X4
RB69	1-231-404-00	680
RB70	1-231-404-00	680
RB71	1-235-461-11	680X6
RB72	1-231-505-11	680X4
RB73	1-231-404-00	680
RB74	1-231-505-11	680X4
RB75	1-231-404-00	680
RB76	1-231-404-00	680
RB77	1-235-461-11	680X6
RB78	1-231-505-11	680X4
RB79	1-235-461-11	680X6
RB80	1-235-461-11	680X6
RB81	1-231-505-11	680X4
RB82	1-231-505-11	680X4
RB83	1-231-505-11	680X4
RB84	1-231-404-00	680
RB85	1-231-404-00	680
RB86	1-231-505-11	680X4

Ref.No.	Part No.	Description
RB87	1-231-404-00	680
RB88	1-231-404-00	680
RB89	1-235-462-11	470X6
RB90	1-231-501-00	470X4
RB91	1-231-505-11	680X4
RB92	1-235-462-11	470X6
RB93	1-235-462-11	470X6
RB94	1-231-501-00	470X4
RB95	1-231-401-00	470
RB96	1-231-401-00	470
RB97	1-231-401-00	470
RB98	1-231-401-00	470
RB99	1-231-501-00	470X4
RB100	1-231-501-00	470X4
RB101	1-231-401-00	470
RB102	1-231-401-00	470
RB103	1-231-501-00	470X4
RB104	1-231-501-00	470X4
RB105	1-235-462-11	470X6
RB106	1-231-501-00	470X4
RB107	1-235-462-11	470X6
RB108	1-231-501-00	470X4
RB109	1-231-401-00	470
RB110	1-231-401-00	470
RB111	1-231-401-00	470
RB112	1-231-401-00	470
RB113	1-231-505-11	680X4
RB114	1-231-505-11	680X4
RB115	1-235-461-11	680X6
RB116	1-235-461-11	680X6
RB117	1-235-461-11	680X6
RB118	1-235-461-11	680X6
RB119	1-235-462-11	470X6
RB120	1-231-501-00	470X4
RB121	1-231-404-00	680
RB122	1-231-404-00	680
RB123	1-231-404-00	680
RB124	1-231-404-00	680
RB125	1-231-505-11	680X4
RB126	1-235-461-11	680X6
RB127	1-231-505-11	680X4
RB128	1-235-461-11	680X6
RB129	1-231-505-11	680X4
RB130	1-231-505-11	680X4
RB131	1-235-461-11	680X6

Ref.No.	Part No	Description
RB132	1-231-505-11	680X4
RB133	1-235-461-11	680X6
RB134	1-231-505-11	680X4
RB135	1-235-461-11	680X6
RB136	1-231-505-11	680X4
RB137	1-231-505-11	680X4
RB138	1-231-505-11	680X4
RB139	1-231-505-11	680X4
RB140	1-231-505-11	680X4
RB141	1-231-505-11	680X4
RB142	1-231-505-11	680X4
RB143	1-231-404-00	680
RB144	1-231-404-00	680
RB145	1-231-505-11	680X4
RB146	1-231-404-00	680
RB147	1-231-404-00	680
RB148	1-231-505-11	680X4
RB149	1-231-456-00	CR
RB150	1-231-505-11	680X4
RB151	1-231-456-00	CR
RB153	1-231-505-11	680X4
RB154	1-231-505-11	680X4
RB155	1-231-505-11	680X4
RB156	1-231-501-00	470X4
SW1	1-553-440-00	TOGGLE

Ref.No.	Part No.	Description
GCN-2 BOARD		
	() A-7513-113-A	MOUNTED CIRCUIT BOARD [GCN-2]
C1	1-123-333-00	ELECT 100 20% 25V
C2	1-123-333-00	ELECT 100 20% 25V
D1	8-719-812-43	TLG124A
IC1D	8-759-001-03	MC10103L: MOTOROLA
IC2D	8-759-301-01	HD10101: HITACHI
IC2E	8-759-764-86	MCM10149L-HDG2: MOTOROLA
IC2F	8-759-764-88	MCM10149L-HDG4: MOTOROLA
IC2G	8-759-001-76	MC10176L: MOTOROLA
IC2H	8-759-001-76	MC10176L: MOTOROLA
IC2J	8-759-001-76	MC10176L: MOTOROLA
IC2L	8-759-001-76	MC10176L: MOTOROLA
IC2M	8-759-001-76	MC10176L: MOTOROLA
IC3D	8-759-301-01	HD10101: HITACHI
IC3E	8-759-764-85	MCM10149L-HDG1: MOTOROLA
IC3F	8-759-764-87	MCM10149L-HDG3: MOTOROLA
IC3G	8-759-001-76	MC10176L: MOTOROLA
IC3K	8-759-301-04	HD10104: HITACHI
IC4C	8-759-001-76	MC10176L: MOTOROLA
IC4D	8-759-001-03	MC10103L: MOTOROLA
IC4G	8-759-001-76	MC10176L: MOTOROLA
IC5C	8-759-001-76	MC10176L: MOTOROLA
IC5D	8-759-301-01	HD10101: HITACHI
IC5E	8-759-764-86	MCM10149L-HDG2: MOTOROLA
IC5F	8-759-764-88	MCM10149L-HDG4: MOTOROLA
IC5G	8-759-001-76	MC10176L: MOTOROLA
IC5H	8-759-003-62	MC10181L: MOTOROLA
IC5J	8-759-003-62	MC10181L: MOTOROLA
IC5L	8-759-003-62	MC10181L: MOTOROLA
IC5M	8-759-003-62	MC10181L: MOTOROLA
IC6C	8-759-001-76	MC10176L: MOTOROLA
IC6D	8-759-301-01	HD10101: HITACHI
IC6E	8-759-764-85	MCM10149L-HDG1: MOTOROLA
IC6F	8-759-764-87	MCM10149L-HDG3: MOTOROLA

Ref. No.	Part No.	Description
IC6H	8-759-003-46	MC10162L: MOTOROLA
IC6J	8-759-003-42	MC10158L: MOTOROLA
IC6K	8-759-003-42	MC10158L: MOTOROLA
IC6L	8-759-003-42	MC10158L: MOTOROLA
IC6M	8-759-003-42	MC10158L: MOTOROLA
IC6N	8-759-003-46	MC10162L: MOTOROLA
IC7B	8-759-001-76	MC10176L: MOTOROLA
IC7C	8-759-301-01	HD10101: HITACHI
IC7D	8-759-301-01	HD10101: HITACHI
IC7E	8-759-301-01	HD10101: HITACHI
IC7F	8-759-301-01	HD10101: HITACHI
IC7G	8-759-001-76	MC10176L: MOTOROLA
IC7H	8-759-003-42	MC10158L: MOTOROLA
IC7J	8-759-301-01	HD10101: HITACHI
IC7K	8-759-001-76	MC10176L: MOTOROLA
IC7L	8-759-301-31	HD10131: HITACHI
IC7M	8-759-001-76	MC10176L: MOTOROLA
IC7N	8-759-301-01	HD10101: HITACHI
IC8A	8-759-001-76	MC10176L: MOTOROLA
IC8B	8-759-001-76	MC10176L: MOTOROLA
IC8C	8-759-003-46	MC10162L: MOTOROLA
IC8D	8-759-301-01	HD10101: HITACHI
IC8E	8-759-003-42	MC10158L: MOTOROLA
IC8F	8-759-003-46	MC10162L: MOTOROLA
IC8G	8-759-001-76	MC10176L: MOTOROLA
IC8H	8-759-001-76	MC10176L: MOTOROLA
IC8J	8-759-764-81	MCM10149L-LCS1: MOTOROLA
IC8K	8-759-764-82	MCM10149L-LCS2: MOTOROLA
IC8L	8-759-764-81	MCM10149L-LCS1: MOTOROLA
IC8M	8-759-764-82	MCM10149L-LCS2: MOTOROLA
IC9A	8-759-003-42	MC10158L: MOTOROLA
IC9B	8-759-003-42	MC10158L: MOTOROLA
IC9C	8-759-001-03	MC10103L: MOTOROLA
IC9D	8-759-301-01	HD10101: HITACHI
IC9F	8-759-001-03	MC10103L: MOTOROLA
IC9G	8-759-003-42	MC10158L: MOTOROLA
IC9H	8-759-003-42	MC10158L: MOTOROLA
IC9J	8-759-764-83	MCM10149L-LCL1: MOTOROLA
IC9K	8-759-764-84	MCM10149L-LCL2: MOTOROLA
IC9L	8-759-764-83	MCM10149L-LCL1: MOTOROLA
IC9M	8-759-764-84	MCM10149L-LCL2: MOTOROLA
IC10A	8-759-003-62	MC10181L: MOTOROLA
IC10C	8-759-003-62	MC10181L: MOTOROLA
IC10D	8-759-001-76	MC10176L: MOTOROLA
IC10E	8-759-001-76	MC10176L: MOTOROLA

Ref.No.	Part No.	Description
IC10F	8-759-003-62	MC10181L: MOTOROLA
IC10H	8-759-003-62	MC10181L: MOTOROLA
IC10J	8-759-301-31	HD10131: HITACHI
IC10K	8-759-001-76	MC10176L: MOTOROLA
IC10L	8-759-301-31	HD10131: HITACHI
IC10M	8-759-001-76	MC10176L: MOTOROLA
IC11D	8-759-001-76	MC10176L: MOTOROLA
IC11E	8-759-001-76	MC10176L: MOTOROLA
IC11J	8-759-764-79	MCM10149L-DGA7: MOTOROLA
IC11K	8-759-764-80	MCM10149L-DGA8: MOTOROLA
IC11L	8-759-764-79	MCM10149L-DGA7: MOTOROLA
IC11M	8-759-764-80	MCM10149L-DGA8: MOTOROLA
IC12A	8-759-003-62	MC10181L: MOTOROLA
IC12C	8-759-003-62	MC10181L: MOTOROLA
IC12D	8-759-301-04	HD10104: HITACHI
IC12E	8-759-301-04	HD10104: HITACHI
IC12F	8-759-003-62	MC10181L: MOTOROLA
IC12H	8-759-003-62	MC10181L: MOTOROLA
IC12J	8-759-764-77	MCM10149L-DGA5: MOTOROLA
IC12K	8-759-764-78	MCM10149L-DGA6: MOTOROLA
IC12L	8-759-764-77	MCM10149L-DGA5: MOTOROLA
IC12M	8-759-764-78	MCM10149L-DGA6: MOTOROLA
IC13A	8-759-001-76	MC10176L: MOTOROLA
IC13B	8-759-001-76	MC10176L: MOTOROLA
IC13C	8-759-001-76	MC10176L: MOTOROLA
IC13D	8-759-301-07	HD10107: HITACHI
IC13F	8-759-001-76	MC10176L: MOTOROLA
IC13G	8-759-001-76	MC10176L: MOTOROLA
IC13H	8-759-001-76	MC10176L: MOTOROLA
IC13J	8-759-764-75	MCM10149L-DGA3: MOTOROLA
IC13K	8-759-764-76	MCM10149L-DGA4: MOTOROLA
IC13L	8-759-764-75	MCM10149L-DGA3: MOTOROLA
IC13M	8-759-764-76	MCM10149L-DGA4: MOTOROLA
IC14A	8-759-001-76	MC10176L: MOTOROLA
IC14B	8-759-001-76	MC10176L: MOTOROLA
IC14C	8-759-001-76	MC10176L: MOTOROLA
IC14D	8-759-001-76	MC10176L: MOTOROLA
IC14E	8-759-001-76	MC10176L: MOTOROLA
IC14F	8-759-001-76	MC10176L: MOTOROLA
IC14G	8-759-001-76	MC10176L: MOTOROLA
IC14H	8-759-001-76	MC10176L: MOTOROLA
IC14J	8-759-764-73	MCM10149L-DGA1: MOTOROLA
IC14K	8-759-764-74	MCM10149L-DGA2: MOTOROLA
IC14L	8-759-764-73	MCM10149L-DGA1: MOTOROLA
IC14M	8-759-764-74	MCM10149L-DGA2: MOTOROLA
IC14N	8-759-301-01	HD10101: HITACHI
IC15B	8-759-001-76	MC10176L: MOTOROLA
IC15C	8-759-001-76	MC10176L: MOTOROLA
IC15D	8-759-001-15	MC10115L: MOTOROLA
IC15E	8-759-001-15	MC10115L: MOTOROLA
IC15F	8-759-301-01	HD10101: HITACHI
IC15G	8-759-301-10	HD10110: HITACHI
IC15H	8-759-301-10	HD10110: HITACHI
IC15J	8-759-301-31	HD10131: HITACHI
IC15K	8-759-001-76	MC10176L: MOTOROLA
IC15L	8-759-301-31	HD10131: HITACHI
IC15M	8-759-001-76	MC10176L: MOTOROLA
IC16A	8-759-001-15	MC10115L: MOTOROLA
IC16B	8-759-001-15	MC10115L: MOTOROLA
IC16C	8-759-001-15	MC10115L: MOTOROLA
IC16D	8-759-001-15	MC10115L: MOTOROLA
IC16E	8-759-001-15	MC10115L: MOTOROLA
IC16F	8-759-003-46	MC10162L: MOTOROLA
IC16G	8-759-301-31	HD10131: HITACHI
IC16H	8-759-301-10	HD10110: HITACHI
IC16J	8-759-301-31	HD10131: HITACHI
IC16K	8-759-001-76	MC10176L: MOTOROLA
IC16L	8-759-301-31	HD10131: HITACHI
IC16M	8-759-001-76	MC10176L: MOTOROLA
IC16N	8-759-001-15	MC10115L: MOTOROLA
IC17A	8-759-001-15	MC10115L: MOTOROLA
IC17B	8-759-001-15	MC10115L: MOTOROLA
IC17C	8-759-001-15	MC10115L: MOTOROLA
IC17D	8-759-001-15	MC10115L: MOTOROLA
IC17E	8-759-001-15	MC10115L: MOTOROLA
IC17F	8-759-001-16	MC10116L: MOTOROLA
IC17G	8-759-301-01	HD10101: HITACHI
IC17H	8-759-301-10	HD10110: HITACHI
IC17J	8-759-301-01	HD10101: HITACHI
IC17K	8-759-301-01	HD10101: HITACHI
IC17L	8-759-301-01	HD10101: HITACHI
IC17M	8-759-301-01	HD10101: HITACHI
IC17N	8-759-001-15	MC10115L: MOTOROLA
RB1	1-231-456-00	CR
RB2	1-231-456-00	CR
RB3	1-231-456-00	CR
RB4	1-231-456-00	CR
RB5	1-231-456-00	CR

Ref.No.	Part No.	Description
RB6	1-235-461-11	680X6
RB7	1-235-461-11	680X6
RB8	1-235-461-11	680X6
RB9	1-231-505-11	680X4
RB10	1-231-404-00	680X8
RB11	1-231-404-00	680X8
RB12	1-231-505-11	680X4
RB13	1-235-461-11	680X6
RB14	1-235-461-11	680X6
RB15	1-231-505-11	680X4
RB16	1-231-505-11	680X4
RB17	1-231-505-11	680X4
RB18	1-231-505-11	680X4
RB19	1-235-461-11	680X6
RB20	1-235-461-11	680X6
RB21	1-231-404-00	680X8
RB22	1-235-461-11	680X6
RB23	1-235-461-11	680X6
RB24	1-231-456-00	CR
RB25	1-231-456-00	CR
RB26	1-231-456-00	CR
RB27	1-231-456-00	CR
RB28	1-231-456-00	CR
RB29	1-235-461-11	680X6
RB30	1-235-461-11	680X6
RB31	1-235-461-11	680X6
RB32	1-231-505-11	680X4
RB33	1-231-404-00	680
RB34	1-231-404-00	680
RB35	1-231-505-11	680X4
RB36	1-235-461-11	680X6
RB37	1-235-461-11	680X6
RB38	1-231-505-11	680X4
RB39	1-231-505-11	680X4
RB40	1-231-505-11	680X4
RB41	1-235-461-11	680X6
RB42	1-235-461-11	680X6
RB43	1-231-505-11	680X4
RB44	1-231-404-00	680
RB45	1-235-461-11	680X6
RB46	1-235-461-11	680X6
RB47	1-231-456-00	CR
RB48	1-231-456-00	CR
RB49	1-231-456-00	CR
RB50	1-231-456-00	CR

Ref.No.	Part No.	Description
RB51	1-231-456-00	CR
RB52	1-231-505-11	680X4
RB53	1-231-505-11	680X4
RB54	1-235-461-11	680X6
RB55	1-231-505-11	680X4
RB56	1-231-404-00	680X8
RB57	1-235-461-11	680X6
RB58	1-231-505-11	680X4
RB59	1-235-461-11	680X6
RB60	1-231-505-11	680X4
RB62	1-231-505-11	680X4
RB63	1-231-505-11	680X4
RB64	1-235-461-11	680X6
RB65	1-231-505-11	680X4
RB66	1-231-505-11	680X4
RB67	1-231-505-11	680X4
RB68	1-235-461-11	680X6
RB69	1-235-461-11	680X6
RB70	1-231-456-00	CR
RB71	1-231-456-00	CR
RB72	1-231-456-00	CR
RB73	1-231-456-00	CR
RB75	1-231-505-11	680X4
RB76	1-231-505-11	680X4
RB77	1-231-404-00	680
RB78	1-231-505-11	680X4
RB79	1-231-404-00	680
RB80	1-235-461-11	680X6
RB81	1-231-505-11	680X4
RB82	1-235-461-11	680X6
RB83	1-231-505-11	680X4
RB84	1-231-505-11	680X4
RB85	1-231-505-11	680X4
RB86	1-231-505-11	680X4
RB87	1-235-461-11	680X6
RB88	1-231-505-11	680X4
RB90	1-231-505-11	680X4
RB91	1-235-461-11	680X6
RB93	1-231-404-00	680
RB94	1-235-461-11	680X6
RB95	1-231-505-11	680X4
RB96	1-231-404-00	680
RB97	1-235-461-11	680X6
RB98	1-231-505-11	680X4
RB99	1-235-461-11	680X6

Ref.No.	Part No.	Description
RB103	1-231-404-00	680
RB104	1-231-404-00	680
RB105	1-231-404-00	680
RB106	1-235-461-11	680X6
RB107	1-231-505-11	680X4
RB108	1-231-404-00	680
RB109	1-235-461-11	680X6
RB110	1-231-505-11	680X4
RB111	1-235-461-11	680X6
RB112	1-231-505-11	680X4
RB113	1-231-505-11	680X4
RB114	1-231-505-11	680X4
RB115	1-231-404-00	680
RB116	1-231-404-00	680
RB117	1-231-505-11	680X4
RB118	1-231-505-11	680X4
RB119	1-231-505-11	680X4
RB120	1-235-461-11	680X6
RB121	1-231-505-11	680X4
RB122	1-231-456-00	CR
RB123	1-231-505-11	680X4
RB124	1-231-505-11	680X4
RB125	1-231-456-00	CR
RB126	1-231-505-11	680X4
RB127	1-231-505-11	680X4
RB128	1-231-505-11	680X4
RB129	1-231-505-11	680X4
RB130	1-231-505-11	680X4
RB131	1-231-505-11	680X4
RB132	1-231-505-11	680X4
RB133	1-231-505-11	680X4
RB134	1-231-505-11	680X4
RB135	1-231-505-11	680X4
RB201	1-231-404-00	680
RB202	1-231-404-00	680
RB203	1-231-404-00	680
RB204	1-231-404-00	680
SW1	1-553-441-00	TOGGLE

Ref.No.	Part No.	Description
LMY-3 BOARD		
	A-7513-112-A	MOUNTED CIRCUIT BOARD "LMY-3"
C1	1-123-333-00	ELECT 100 20% 25V
C2	1-123-333-00	ELECT 100 20% 25V
IC1A	8-759-301-31	HD10131: HITACHI
IC1B	8-759-001-76	MC10176L: MOTOROLA
IC1C	8-759-913-97	MBM10474A-15Z: FUJITSU
IC1G	8-759-913-97	MBM10474A-15Z: FUJITSU
IC1J	8-759-001-76	MC10176L: MOTOROLA
IC1K	8-759-001-76	MC10176L: MOTOROLA
IC1L	8-759-001-76	MC10176L: MOTOROLA
IC2A	8-759-003-42	MC10158L: MOTOROLA
IC2B	8-759-003-42	MC10158L: MOTOROLA
IC2C	8-759-913-97	MBM10474A-15Z: FUJITSU
IC2E	8-759-913-97	MBM10474A-15Z: FUJITSU
IC2F	8-759-300-26	HD10136: HITACHI
IC2G	8-759-913-97	MBM10474A-15Z: FUJITSU
IC2J	8-759-001-76	MC10176L: MOTOROLA
IC2K	8-759-301-31	HD10131: HITACHI
IC2L	8-759-001-76	MC10176L: MOTOROLA
IC2M	8-759-301-31	HD10131: HITACHI
IC2N	8-759-301-31	HD10131: HITACHI
IC3A	8-759-301-31	HD10131: HITACHI
IC3B	8-759-001-76	MC10176L: MOTOROLA
IC3C	8-759-913-97	MBM10474A-15Z: FUJITSU
IC3E	8-759-300-26	HD10136: HITACHI
IC3F	8-759-300-26	HD10136: HITACHI
IC3G	8-759-913-97	MBM10474A-15Z: FUJITSU
IC3J	8-759-001-76	MC10176L: MOTOROLA
IC3K	8-759-301-31	HD10131: HITACHI
IC3L	8-759-001-76	MC10176L: MOTOROLA
IC3M	8-759-001-76	MC10176L: MOTOROLA
IC3N	8-759-301-31	HD10131: HITACHI
IC4A	8-759-003-42	MC10158L: MOTOROLA
IC4B	8-759-001-76	MC10176L: MOTOROLA
IC4C	8-759-301-31	HD10131: HITACHI
IC4D	8-759-301-01	HD10101: HITACHI
IC4E	8-759-301-01	HD10101: HITACHI
IC4F	8-759-301-31	HD10131: HITACHI

Ref.No.	Part No.	Description
IC4G	8-759-913-97	MBM10474A-15Z: FUJITSU
IC4J	8-759-001-76	MC10176L: MOTOROLA
IC4K	8-759-001-76	MC10176L: MOTOROLA
IC4L	8-759-001-76	MC10176L: MOTOROLA
IC4M	8-759-301-31	HD10131: HITACHI
IC4N	8-759-301-01	HD10101: HITACHI
IC5A	8-759-001-76	MC10176L: MOTOROLA
IC5B	8-759-301-31	HD10131: HITACHI
IC5C	8-759-003-42	MC10158L: MOTOROLA
IC5D	8-759-301-01	HD10101: HITACHI
IC5E	8-759-301-01	HD10101: HITACHI
IC5F	8-759-301-01	HD10101: HITACHI
IC5G	8-759-301-01	HD10101: HITACHI
IC5H	8-759-301-10	HD10110: HITACHI
IC5J	8-759-301-10	HD10110: HITACHI
IC5K	8-759-301-10	HD10110: HITACHI
IC5L	8-759-301-10	HD10110: HITACHI
IC5M	8-759-001-76	MC10176L: MOTOROLA
IC5N	8-759-301-01	HD10101: HITACHI
IC6A	8-759-003-42	MC10158L: MOTOROLA
IC6B	8-759-003-42	MC10158L: MOTOROLA
IC6C	8-759-001-76	MC10176L: MOTOROLA
IC6D	8-759-301-01	HD10101: HITACHI
IC6E	8-759-301-01	HD10101: HITACHI
IC6F	8-759-301-01	HD10101: HITACHI
IC6G	8-759-301-01	HD10101: HITACHI
IC6H	8-759-301-01	HD10101: HITACHI
IC6J	8-759-300-26	HD10136: HITACHI
IC6K	8-759-300-26	HD10136: HITACHI
IC6L	8-759-300-26	HD10136: HITACHI
IC6M	8-759-003-42	MC10158L: MOTOROLA
IC6N	8-759-301-01	HD10101: HITACHI
IC7A	8-759-301-31	HD10131: HITACHI
IC7B	8-759-301-01	HD10101: HITACHI
IC7C	8-759-301-01	HD10101: HITACHI
IC7E	8-759-301-31	HD10131: HITACHI
IC7F	8-759-001-15	MC10115L: MOTOROLA
IC7G	8-759-301-31	HD10131: HITACHI
IC7H	8-759-301-01	HD10101: HITACHI
IC7J	8-759-301-01	HD10101: HITACHI
IC7K	8-759-301-01	HD10101: HITACHI
IC7L	8-759-301-01	HD10101: HITACHI
IC7M	8-759-001-15	MC10115L: MOTOROLA
IC7N	8-759-301-01	HD10101: HITACHI
IC8A	8-759-301-01	HD10101: HITACHI

Ref.No	Part No.	Description
IC8B	8-759-301-01	HD10101: HITACHI
IC8C	8-759-301-01	HD10101: HITACHI
IC8D	8-759-301-01	HD10101: HITACHI
IC8E	8-759-001-76	MC10176L: MOTOROLA
IC8F	8-759-003-46	MC10162L: MOTOROLA
IC8G	8-759-301-31	HD10131: HITACHI
IC8H	8-759-300-26	HD10136: HITACHI
IC8J	8-759-301-01	HD10101: HITACHI
IC8K	8-759-301-01	HD10101: HITACHI
IC8M	8-759-003-42	MC10158L: MOTOROLA
IC9A	8-759-301-01	HD10101: HITACHI
IC9B	8-759-301-01	HD10101: HITACHI
IC9C	8-759-301-01	HD10101: HITACHI
IC9D	8-759-301-01	HD10101: HITACHI
IC9E	8-759-301-01	HD10101: HITACHI
IC9F	8-759-001-16	MC10116L: MOTOROLA
IC9G	8-759-001-16	MC10116L: MOTOROLA
IC9H	8-759-001-16	MC10116L: MOTOROLA
IC9J	8-759-301-01	HD10101: HITACHI
IC9K	8-759-301-01	HD10101: HITACHI
IC9L	8-759-301-01	HD10101: HITACHI
IC9M	8-759-001-15	MC10115L: MOTOROLA
IC10B	8-759-301-31	HD10131: HITACHI
IC10C	8-759-003-42	MC10158L: MOTOROLA
IC10D	8-759-301-31	HD10131: HITACHI
IC10E	8-759-913-97	MBM10474A-15Z: FUJITSU
IC10G	8-759-913-97	MBM10474A-15Z: FUJITSU
IC10H	8-759-001-76	MC10176L: MOTOROLA
IC10J	8-759-001-76	MC10176L: MOTOROLA
IC10K	8-759-301-31	HD10131: HITACHI
IC10L	8-759-301-31	HD10131: HITACHI
IC11B	8-759-001-76	MC10176L: MOTOROLA
IC11C	8-759-003-42	MC10158L: MOTOROLA
IC11D	8-759-001-76	MC10176L: MOTOROLA
IC11E	8-759-913-97	MBM10474A-15Z: FUJITSU
IC11G	8-759-913-97	MBM10474A-15Z: FUJITSU
IC11H	8-759-001-76	MC10176L: MOTOROLA
IC11K	8-759-001-76	MC10176L: MOTOROLA
IC11L	8-759-001-76	MC10176L: MOTOROLA
IC12A	8-759-301-31	HD10131: HITACHI
IC12B	8-759-001-76	MC10176L: MOTOROLA
IC12C	8-759-003-42	MC10158L: MOTOROLA
IC12D	8-759-003-42	MC10158L: MOTOROLA
IC12H	8-759-001-76	MC10176L: MOTOROLA
IC12J	8-759-001-76	MC10176L: MOTOROLA

Ref.No.	Part No.	Description
IC12K	8-759-301-31	HD10131: HITACHI
IC12L	8-759-301-31	HD10131: HITACHI
IC12M	8-759-001-76	MC10176L: MOTOROLA
IC13A	8-759-301-01	HD10101: HITACHI
IC13B	8-759-003-42	MC10158L: MOTOROLA
IC13C	8-759-301-31	HD10131: HITACHI
IC13D	8-759-001-76	MC10176L: MOTOROLA
IC13E	8-759-913-97	MBM10474A-15Z: FUJITSU
IC13G	8-759-913-97	MBM10474A-15Z: FUJITSU
IC13H	8-759-001-76	MC10176L: MOTOROLA
IC13J	8-759-003-42	MC10158L: MOTOROLA
IC13K	8-759-003-42	MC10158L: MOTOROLA
IC13L	8-759-001-76	MC10176L: MOTOROLA
IC13M	8-759-001-76	MC10176L: MOTOROLA
IC14A	8-759-301-01	HD10101: HITACHI
IC14B	8-759-001-76	MC10176L: MOTOROLA
IC14C	8-759-003-42	MC10158L: MOTOROLA
IC14D	8-759-301-31	HD10131: HITACHI
IC14E	8-759-913-97	MBM10474A-15Z: FUJITSU
IC14G	8-759-913-97	MBM10474A-15Z: FUJITSU
IC14H	8-759-001-76	MC10176L: MOTOROLA
IC14J	8-759-001-15	MC10115L: MOTOROLA
IC14K	8-759-001-15	MC10115L: MOTOROLA
IC14L	8-759-301-31	HD10131: HITACHI
IC14M	8-759-301-31	HD10131: HITACHI
IC15B	8-759-301-31	HD10131: HITACHI
IC15C	8-759-003-42	MC10158L: MOTOROLA
IC15D	8-759-301-31	HD10131: HITACHI
IC15E	8-759-913-97	MBM10474A-15Z: FUJITSU
IC15G	8-759-913-97	MBM10474A-15Z: FUJITSU
IC15H	8-759-001-76	MC10176L: MOTOROLA
IC15J	8-759-001-76	MC10176L: MOTOROLA
IC15K	8-759-301-31	HD10131: HITACHI
IC15L	8-759-301-31	HD10131: HITACHI
IC16B	8-759-001-76	MC10176L: MOTOROLA
IC16C	8-759-003-42	MC10158L: MOTOROLA
IC16D	8-759-001-76	MC10176L: MOTOROLA
IC16H	8-759-001-76	MC10176L: MOTOROLA
IC16K	8-759-001-76	MC10176L: MOTOROLA
IC16L	8-759-001-76	MC10176L: MOTOROLA
IC17A	8-759-301-31	HD10131: HITACHI
IC17B	8-759-001-76	MC10176L: MOTOROLA
IC17C	8-759-003-42	MC10158L: MOTOROLA
IC17D	8-759-003-42	MC10158L: MOTOROLA
IC17E	8-759-913-97	MBM10474A-15Z: FUJITSU

Ref.No.	Part No.	Description
IC17G	8-759-913-97	MBM10474A-15Z: FUJITSU
IC17H	8-759-001-76	MC10176L: MOTOROLA
IC17J	8-759-001-76	MC10176L: MOTOROLA
IC17K	8-759-301-31	HD10131: HITACHI
IC17L	8-759-301-31	HD10131: HITACHI
IC17M	8-759-001-76	MC10176L: MOTOROLA
IC18A	8-759-301-01	HD10101: HITACHI
IC18B	8-759-003-42	MC10158L: MOTOROLA
IC18C	8-759-301-31	HD10131: HITACHI
IC18D	8-759-001-76	MC10176L: MOTOROLA
IC18E	8-759-913-97	MBM101474A-15Z: FUJITSU
IC18G	8-759-913-97	MBM101474A-15Z: FUJITSU
IC18H	8-759-001-76	MC10176L: MOTOROLA
IC18J	8-759-003-42	MC10158L: MOTOROLA
IC18K	8-759-003-42	MC10158L: MOTOROLA
IC18L	8-759-001-76	MC10176L: MOTOROLA
IC18M	8-759-001-76	MC10176L: MOTOROLA
IC19A	8-759-301-01	HD10101: HITACHI
IC19B	8-759-001-76	MC10176L: MOTOROLA
IC19C	8-759-003-42	MC10158L: MOTOROLA
IC19D	8-759-301-31	HD10131: HITACHI
IC19E	8-759-913-97	MBM101474A-15Z: FUJITSU
IC19G	8-759-913-97	MBM101474A-15Z: FUJITSU
IC19H	8-759-001-76	MC10176L: MOTOROLA
IC19J	8-759-001-15	MC10115L: MOTOROLA
IC19K	8-759-001-15	MC10115L: MOTOROLA
IC19L	8-759-301-31	HD10131: HITACHI
IC19M	8-759-301-31	HD10131: HITACHI
LED1	8-719-812-41	TLR124
RB1	1-231-505-11	680X4
RB2	1-231-505-11	680X4
RB3	1-231-505-11	680X4
RB4	1-231-505-11	680X4
RB5	1-231-505-11	680X4
RB6	1-231-505-11	680X4
RB7	1-235-461-11	680X6
RB8	1-231-505-11	680X4
RB9	1-231-505-11	680X4
RB10	1-231-501-00	470X4
RB11	1-231-501-00	470X4
RB12	1-231-501-00	470X4
RB13	1-231-501-00	470X4
RB14	1-231-401-00	470
RB15	1-231-401-00	470

Ref.No.	Part No.	Description
RB16	1-231-501-00	470X4
RB17	1-231-501-00	470X4
RB18	1-231-501-00	470X4
RB19	1-231-401-00	470
RB20	1-231-401-00	470
RB21	1-235-461-11	680X6
RB22	1-231-505-11	680X4
RB23	1-231-505-11	680X4
RB24	1-235-461-11	680X6
RB25	1-235-461-11	680X6
RB26	1-231-505-11	680X4
RB27	1-231-505-11	680X4
RB28	1-231-505-11	680X4
RB29	1-231-501-00	470X4
RB30	1-231-401-00	470
RB31	1-231-505-11	680X4
RB32	1-235-461-11	680X6
RB33	1-235-461-11	680X6
RB34	1-231-505-11	680X4
RB35	1-231-505-11	680X4
RB36	1-235-462-11	470X6
RB37	1-231-505-11	680X4
RB38	1-235-461-11	680X6
RB39	1-235-461-11	680X6
RB40	1-231-505-11	680X4
RB41	1-231-505-11	680X4
RB42	1-235-462-11	470X6
RB43	1-231-505-11	680X4
RB44	1-231-505-11	680X4
RB45	1-231-505-11	680X4
RB46	1-231-505-11	680X4
RB47	1-231-505-11	680X4
RB48	1-231-505-11	680X4
RB49	1-235-462-11	470X6
RB50	1-231-501-00	470X4
RB51	1-231-401-00	470
RB52	1-231-505-11	680X4
RB53	1-231-505-11	680X4
RB54	1-231-505-11	680X4
RB55	1-231-505-11	680X4
RB56	1-231-505-11	680X4
RB57	1-231-505-11	680X4
RB58	1-231-505-11	680X4
RB59	1-231-505-11	680X4
RB60	1-231-505-11	680X4

Ref.No.	Part No.	Description
RB61	1-231-505-11	680X4
RB62	1-231-505-11	680X4
RB63	1-231-505-11	680X4
RB64	1-231-505-11	680X4
RB65	1-231-505-11	680X4
RB66	1-231-505-11	680X4
RB67	1-231-505-11	680X4
RB68	1-231-505-11	680X4
RB69	1-235-461-11	680X6
RB70	1-231-505-11	680X4
RB71	1-231-404-00	680
RB72	1-231-505-11	680X4
RB73	1-235-461-11	680X6
RB74	1-231-505-11	680X4
RB75	1-231-505-11	680X4
RB76	1-235-461-11	680X6
RB77	1-231-505-11	680X4
RB78	1-231-505-11	680X4
RB79	1-231-505-11	680X4
RB80	1-235-461-11	680X6
RB81	1-231-505-11	680X4
RB82	1-231-505-11	680X4
RB83	1-235-461-11	680X6
RB84	1-231-505-11	680X4
RB85	1-235-461-11	680X6
RB86	1-235-461-11	680X6
RB87	1-231-505-11	680X4
RB88	1-231-404-00	680
RB89	1-231-505-11	680X4
RB90	1-231-505-11	680X4
RB91	1-231-505-11	680X4
RB92	1-235-461-11	680X6
RB93	1-231-404-00	680
RB94	1-231-505-11	680X4
RB95	1-231-505-11	680X4
RB96	1-231-505-11	680X4
RB97	1-231-505-11	680X4
RB98	1-235-461-11	680X6
RB99	1-235-461-11	680X6
RB100	1-231-505-11	680X4
RB101	1-231-505-11	680X4
RB102	1-231-505-11	680X4
RB103	1-231-505-11	680X4
RB104	1-235-461-11	680X6
RB105	1-235-461-11	680X6

Ref.No.	Part No.	Description
RB106	1-231-505-11	680X4
RB107	1-235-461-11	680X6
RB108	1-231-456-00	CR
RB109	1-231-456-00	CR
RB110	1-235-461-11	680X6
RB111	1-231-505-11	680X4
RB112	1-231-505-11	680X4
RB113	1-231-505-11	680X4
RB114	1-231-505-11	680X4
RB115	1-235-461-11	680X6
RB116	1-231-505-11	680X4
RB117	1-231-505-11	680X4
RB118	1-231-505-11	680X4
RB119	1-231-505-11	680X4
RB120	1-231-505-11	680X4
RB121	1-235-461-11	680X6
RB122	1-235-461-11	680X6
RB123	1-231-505-11	680X4
RB124	1-231-505-11	680X4
RB125	1-231-505-11	680X4
RB126	1-231-505-11	680X4
RB127	1-235-461-11	680X6
RB128	1-235-461-11	680X6
RB129	1-231-505-11	680X4
RB130	1-235-461-11	680X6
RB131	1-231-501-00	470X4
RB132	1-231-501-00	470X4
RB133	1-235-461-11	680X6
RB134	1-235-461-11	680X6
RB135	1-235-505-11	680X4
RB136	1-231-505-11	680X4
RB137	1-231-505-11	680X4
RB138	1-235-461-11	680X6
RB139	1-235-461-11	680X6
RB140	1-235-461-11	680X6
RB141	1-235-461-11	680X6
RB142	1-231-505-11	680X4
RB143	1-235-461-11	680X6
RB144	1-235-461-11	680X6
RB145	1-235-461-11	680X6
RB146	1-231-505-11	680X4
RB147	1-235-461-11	680X6
RB148	1-231-505-11	680X4
RB149	1-235-461-11	680X6
RB150	1-231-505-11	680X4

Ref.No.	Part No.	Description
RB151	1-231-505-11	680X4
RB152	1-231-501-00	470X4
RB153	1-231-501-00	470X4
RB154	1-231-456-00	CR
RB155	1-231-456-00	CR
RB156	1-231-505-11	680X4
RB157	1-231-505-11	680X4
RB158	1-231-501-00	470X4
RB159	1-231-501-00	470X4
RB160	1-231-456-00	CR
RB161	1-231-456-00	CR
RB162	1-231-505-11	680X4
RB163	1-231-404-00	680
RB164	1-231-501-00	470X4
RB165	1-231-501-00	470X4
RB166	1-231-456-00	CR
RB167	1-231-456-00	CR
RB168	1-231-501-00	470X4
RB169	1-231-501-00	470X4
RB170	1-231-456-00	CR
RB171	1-231-456-00	CR
RB172	1-235-462-11	470X6
RB173	1-235-461-11	680X6
RB174	1-231-505-11	680X4
RB175	1-231-501-00	470X4
RB176	1-231-404-00	680
RB177	1-231-501-00	470X4
RB178	1-235-462-11	470X6
RB179	1-231-505-11	680X4
RB180	1-235-462-11	470X6
RB181	1-231-501-00	470X4
RB182	1-231-501-00	470X4
RB183	1-235-462-11	470X6
RB184	1-231-505-11	680X4
RB185	1-235-462-11	470X6
RB186	1-231-501-00	470X4
RB187	1-231-501-00	470X4
RB188	1-231-501-00	470X4
RB189	1-235-462-11	470X6
RB190	1-231-501-00	470X4
RB191	1-231-456-00	CR
RB192	1-231-456-00	CR
RB193	1-231-501-00	470X4
RB194	1-231-501-00	470X4
RB195	1-231-456-00	CR

Ref.No.	Part No	Description
RB196	1-235-461-11	680X6
RB197	1-235-461-11	680X6
RB198	1-231-404-00	680
RB199	1-231-505-11	680X4
RB200	1-231-505-11	680X4
RB201	1-231-505-11	680X4
RB202	1-231-404-00	680X4
RB204	1-231-404-00	680X4
RB205	1-231-505-11	680X4
RB206	1-231-404-00	680X4
RB208	1-231-456-00	CR
SW1	1-553-441-00	TOGGLE
SW2	1-554-142-00	SLIDE

Ref.No.	Part No.	Description
MB-12 BOARD		
	A-7513-108-A	MOUNTED CIRCUIT BOARD "MB-12"
C1 to C8		
	1-124-145-00	ELECT 330 20% 16V
CN1	() 1-560-726-00	RECEPTACLE, 20P
	1-935-410-11	MB-CP HARNESS
CN2	() 1-560-726-00	RECEPTACLE, 20P
CN3 to CN16		
	1-561-365-00	RECEPTACLE, RF
CN17 to CN28		
	1-508-892-11	RECEPTACLE, 100P FEMALE

Ref.No.	Part No.	Description
SG-20S BOARD		
	A-7513-109-A	MOUNTED CIRCUIT BOARD "SG-20S"
C1	1-123-333-00	ELECT 100 20% 25V
C2	1-123-333-00	ELECT 100 20% 25V
C8	1-109-535-00	MICA 100PF 5% 100V
C9	1-109-535-00	MICA 100PF 5% 100V
C15	1-107-209-00	MICA 20PF 5% 50V
C16	1-130-475-00	MYLAR 0.0022 5% 50V
C26	1-109-553-00	MICA 470PF 5% 100V
C27	1-109-527-00	MICA 47PF 5% 100V
C29	1-130-475-00	MYLAR 0.0022 5% 50V
C30	1-109-542-00	MICA 220PF 5% 100V
C31	1-130-475-00	MYLAR 0.0022 5% 50V
C32	1-130-479-00	MYLAR 0.0047 5% 50V
C33	1-130-475-00	MYLAR 0.0022 5% 50V
C34	1-130-477-00	MYLAR 0.0033 5% 50V
C35	1-130-475-00	MYLAR 0.0022 5% 50V
C36	1-109-542-00	MICA 220PF 5% 100V
C37	1-109-554-00	MICA 510PF 5% 100V
C40	1-161-898-00	CERAMIC 0.47 50V
C41	1-161-898-00	CERAMIC 0.47 50V
C44	1-108-587-00	MYLAR 0.022 5% 50V
C49	1-130-475-00	MYLAR 0.0022 5% 50V
C52	1-109-553-00	MICA 470PF 5% 100V
C53	1-109-553-00	MICA 470PF 5% 100V
C72	1-108-587-00	MYLAR 0.022 5% 50V
C82	1-108-587-00	MYLAR 0.022 5% 50V
C88	1-109-542-00	MICA 220PF 5% 100V
C89	1-109-542-00	MICA 220PF 5% 100V
C91	1-161-890-11	CERAMIC 0.022 50V
C95	1-161-890-11	CERAMIC 0.022 50V
C105	1-123-333-00	ELECT 100 20% 25V
C112	1-123-333-00	ELECT 100 20% 25V
CN1	1-561-310-00	RECEPTACLE, RF
CN2	1-561-310-00	RECEPTACLE, RF
CN3	1-561-310-00	RECEPTACLE, RF

Ref.No.	Part NO.	Description
D1	8-719-812-43	TLG124A
D2	8-719-162-07	RD6.2EB
D3	8-719-815-87	1S1587
D4	8-719-815-87	1S1587
D5	8-719-162-07	RD6.2EB
D6	8-719-812-43	TLG124A
D7	8-719-812-41	TLR124
D8	8-719-812-41	TLR124
D9	8-719-815-87	1S1587
D10	8-719-162-07	RD6.2EB
D11	8-719-182-07	RD8.2EB
D13	8-719-815-87	1S1587
D14	8-719-815-87	1S1587
D15	8-719-815-87	1S1587
D16	8-719-815-87	1S1587
FB1 to FB8 FB15 to FB26	1-535-178-00	
IC1	8-743-651-00	BX365A: SONY
IC2	8-743-651-00	BX365A: SONY
IC3	8-743-661-00	BX366A: SONY
IC4	8-759-990-82	TL082CP: TI
IC5	8-759-930-80	CA3080E: RCA
IC6	8-759-926-10	TL610CP: TI
IC7	8-759-904-20	MB4002: FUJITSU
IC8	8-743-661-00	BX366A: SONY
IC9	8-759-904-20	MB4002: FUJITSU
IC10	8-759-902-21	SN74LS221N: TI
IC11	8-759-900-00	SN74LS00N: TI
IC12	8-759-902-21	SN74LS221N: TI
IC13	8-759-902-21	SN74LS221N: TI
IC14	8-759-902-21	SN74LS221N: TI
IC15	8-759-900-74	SN74LS74AN: TI
IC16	8-759-900-74	SN74LS74AN: TI
IC17	8-759-942-65	SN74265N: TI
IC18	8-759-901-74	SN74LS174N: TI
IC19	8-759-900-74	SN74LS74AN: TI
IC20	8-759-901-23	SN74LS123N: TI
IC21	8-759-901-53	SN74LS153N: TI
IC22	8-759-901-57	SN74LS157N: TI
IC23	8-759-902-21	SN74LS221N: TI
IC24	8-759-220-74	TC40H074P: TOSHIBA
IC25	8-759-942-65	SN74265N: TI

Ref.No.	Part No.	Description
IC26	8-759-902-21	SN74LS221N: TI
IC27	8-743-810-00	BX381: SONY
IC28	8-759-906-07	TL607CP: TI
IC29	8-759-990-82	TL082CP: TI
IC30	8-759-001-16	MC10116L: MOTOROLA
IC31	8-759-001-35	MC10135L: MOTOROLA
IC32	8-759-300-25	HD10125: HITACHI
IC37	8-749-900-00	HD-1A: SONY
IC38	8-759-930-80	CA3080E: RCA
IC39	8-759-990-82	TL082CP: TI
IC40	8-752-020-20	CX20202: SONY
IC41	8-749-900-00	HD-1A: SONY
IC42	8-759-930-80	CA3080E: RCA
IC43	8-759-990-82	TL082CP: TI
IC44	8-752-020-20	CX20202: SONY
IC45	8-759-301-05	HD10105: HITACHI
IC46	8-759-301-05	HD10105: HITACHI
IC47	8-759-003-42	MC10158L: MOTOROLA
IC48	8-759-003-42	MC10158L: MOTOROLA
IC49	8-759-003-42	MC10158L: MOTOROLA
IC50	8-759-301-24	HD10124: HITACHI
IC51	8-759-901-57	SN74LS157N: TI
IC52	8-759-301-24	HD10124: HITACHI
IC53	8-759-301-24	HD10124: HITACHI
IC54	8-759-301-24	HD10124: HITACHI
IC55	8-759-301-24	HD10124: HITACHI
IC56	8-759-301-24	HD10124: HITACHI
IC57	8-759-902-21	SN74LS221N: TI
IC58	8-759-904-87	74F374PC: FSC
IC59	8-759-904-87	74F374PC: FSC
IC60	8-759-904-87	74F374PC: FSC
IC61	8-759-762-42	MB7138H S1A: FUJITSU
IC63	8-759-762-42	MB7138H S1A: FUJITSU
IC65	8-759-762-41	MB7138H S0A: FUJITSU
IC67	8-759-762-41	MB7138H S0A: FUJITSU
IC69	8-759-904-87	74F374PC: FSC
IC70	8-759-764-96	MB7138H SH3: FUJITSU
IC71	8-759-904-87	74F374PC: FSC
IC72	8-759-904-87	74F374PC: FSC
IC73	8-759-904-87	74F374PC: FSC
IC74	8-759-904-87	74F374PC: FSC
IC75	8-759-904-87	74F374PC: FSC
IC76	8-759-904-87	74F374PC: FSC
IC77	8-759-911-75	SN74S175N: TI
IC78	8-759-911-63	SN74S163N: TI
IC79	8-759-911-63	SN74S163N: TI
IC80	8-759-911-75	SN74S175N: TI
IC81	8-759-911-63	SN74S163N: TI
IC82	8-759-911-63	SN74S163N: TI
IC83	8-759-900-00	SN74LS00N: TI
IC84	8-759-240-50	TC4050BP: TOSHIBA
IC85	8-759-901-57	SN74LS157N: TI
IC86	8-759-200-34	TC40H163P: TOSHIBA
IC87	8-759-200-34	TC40H163P: TOSHIBA
IC88	8-759-200-34	TC40H163P: TOSHIBA
IC89	8-759-240-50	TC4050BP: TOSHIBA
IC90	8-759-900-30	SN74LS30N: TI
IC91	8-759-900-30	SN74LS30N: TI
IC92	8-759-903-78	SN74LS378N: TI
IC93	8-759-903-78	SN74LS378N: TI
IC94	8-759-900-00	SN74LS00N: TI
IC95	8-759-240-50	TC4050BP: TOSHIBA
IC96	8-759-901-48	SN74LS148N: TI
IC97	8-759-301-24	HD10124: HITACHI
IC98	8-759-301-24	HD10124: HITACHI
IC99	8-759-301-24	HD10124: HITACHI
IC100	8-759-301-24	HD10124: HITACHI
IC101	8-759-904-87	74F374PC:
IC102	8-759-764-98	MBM27C32A-30 SV3 : FUJITSU
IC103	8-743-931-10	BX3931A: SONY
IC106	8-743-931-10	BX3931A: SONY
IC109	8-743-931-10	BX3931A: SONY
IC112	8-749-900-00	HD-1A: SONY
IC113	8-749-900-00	HD-1A: SONY
IC114	8-749-900-00	HD-1A: SONY
IC115	8-749-900-00	HD-1A: SONY
IC117	8-743-931-10	BX3931A: SONY
IC118	8-743-931-10	BX3931A: SONY
IC119	8-749-900-00	HD-1A: SONY
IC120	8-749-900-00	HD-1A: SONY
IC121	8-749-900-00	HD-1A: SONY
IC122	8-749-900-00	HD-1A: SONY
IC123	8-749-900-00	HD-1A: SONY
IC124	8-749-900-00	HD-1A: SONY
IC125	8-749-900-00	HD-1A: SONY
IC126	8-749-900-00	HD-1A: SONY
IC127	8-749-900-00	HD-1A: SONY
IC129	8-759-914-44	TL431CLPB: TI
IC130	8-759-914-44	TL431CLPB: TI

Ref.No.	Part No.	Description
L39	1-421-329-00	CHOKE 10
L40	1-421-329-00	CHOKE 10
L41	1-421-329-00	CHOKE 10
L42	1-421-329-00	CHOKE 10
L43	1-421-329-00	CHOKE 10
L44	1-421-329-00	CHOKE 10
LPF2	1-235-426-11	8.5MHz
LPF3	1-235-426-11	8.5MHz
Q1	8-729-105-72	2SK523-L1
Q2	8-729-105-72	2SK523-L1
Q3	8-729-105-72	2SK523-L1
Q4	8-729-173-37	2SA733-P
Q6	8-729-173-37	2SA733-P
Q7	8-729-173-37	2SA733-P
Q17	8-729-378-84	2SD788
Q18	8-729-378-84	2SD788
R20	1-215-823-11	METAL 51K 1% 1/8W
R22	1-215-823-11	METAL 51K 1% 1/8W
R136	1-215-830-11	METAL 100K 1% 1/8W
R137	1-215-830-11	METAL 100K 1% 1/8W
RB1	1-231-401-00	470
RB2	1-231-401-00	470
RB3	1-231-401-00	470
RB4	1-231-401-00	470
RB5	1-231-401-00	470
RB6	1-231-533-00	10KX4
RB7	1-231-450-00	3.3KX8
RB8	1-231-521-00	3.3KX4
RB9	1-231-450-00	3.3KX8
RB10	1-231-404-00	680
RB11	1-231-404-00	680
RB12	1-231-404-00	680
RV16	1-224-941-00	METAL 20K
RV17	1-224-936-00	METAL 500
RV18	1-224-936-00	METAL 500
RV19	1-224-936-00	METAL 500
RV20	1-224-936-00	METAL 500

Ref.No.	Part No.	Description
RV21	1-224-936-00	METAL 500
RV22	1-224-936-00	METAL 500
RV23	1-224-936-00	METAL 500
RV24	1-224-936-00	METAL 500
RV25	1-224-936-00	METAL 500
RV26	1-224-936-00	METAL 500
RV27	1-224-936-00	METAL 500
RV28	1-224-936-00	METAL 500
RV29	1-224-936-00	METAL 500
RV30	1-224-936-00	METAL 500
RV31	1-224-936-00	METAL 500
RV32	1-224-940-00	METAL 10K
RV33	1-224-938-00	METAL 2K
RV34	1-224-937-00	METAL 1K
RV36	1-224-937-00 (Ser. No. up to 10115)	METAL 1K
RV36	1-224-938-00 (Ser. No. 10201 and higher)	METAL 2K
RV37	1-224-937-00 (Ser. No. up to 10115)	METAL 1K
RV37	1-224-938-00 (Ser. No. 10201 and higher)	METAL 2K
RV38	1-224-941-00	METAL 20K
RV601	1-228-458-00	METAL 5K
RY1	1-515-309-21	12V 1000OHM
RY2	1-515-309-21	12V 1000OHM
SW1	1-553-441-00	TOGGLE
SW2	1-553-441-00	TOGGLE
SW3	1-553-441-00	TOGGLE
VCO1	1-567-333-11	6.912MHz

Ref.No.		Part No.	Description
FRAME			
		1-935-421-11	BNC CONNECTOR WITH HARNESS "INPUT [BNC]"
		1-935-423-11	BNC CONNECTOR WITH HARNESS "OUTPUT [BNC]"
CN35	()	1-935-422-11	CONNECTOR WITH HARNESS "CCU"
CN88	()	1-562-726-11	RECEPTACLE, 37P MALE
CN89	()	1-561-083-21	PLUG HOUSING 2P
	()	1-535-206-00	PLUG CONTACT
D101		8-719-907-03	BD703G "POWER"
M101		1-541-280-11	FAN

Ref.No.		Part No.	Description
PACKING MATERIAL & ACCESSORY			
		A-7513-115-A	BOARD EXTENDER "EX-77"
		1-506-411-00	ADAPTOR, AC PLUG 3P-2P
		1-935-188-12	HDVTC-1 HARNESS
		1-935-414-11	EXCAB HARNESS
	()	3-694-102-01	SPACER
	()	3-694-103-01	CARTON INDIVIDUAL
	()	3-694-104-01	CUSHION, UPPER
	()	3-694-105-01	CUSHION, LOWER
		3-701-632-01	BAG, POLY (FOR HARNESS)
		3-701-648-01	BAG, POLY (FOR HDIE-100)

HDIE-100(J)
3-691-474-02

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Printed in Japan
1985.10 08